ENGINEERING CHANGE NOTICE

Page 1 of 6 ☒ DM ☐ FM ☐ TM

1a. ECN 720095 R 10

1b. Proj. ECN W- - R

2. Request Information Record Information on the ECN-1 Form	3a. Design Inputs -Record Information on the ECN-2 Form	3b. Design Outputs / References - Record Information on the ECN-3 Form	3c. Engineering Evaluation / Estimate / Approval to Proceed w/ the Design - Record Information on the ECN-4 Form

4. Originator's Name, Organization, MSIN, & Phone No.
B. M. Hanlon, Process Analysis/Flowsheet and Process Models, R1-14, 373-2053

5. USQ Number No. TF - - R -
☒ N/A
☐ Refer to Work Package

6. Date
10/23/03

7. Title
HNF-EP-0182, Rev. 187, Waste Tank Summary for Month Ending October 31, 2003

8. Bldg. / Facility No.
241G

9. Equipment / Component ID
N/A

10. Approval Designator
N/A

11. Documents/Drawings Changed by this ECN (Record the information on the ECN-5 Form, including sheet and revision numbers.)

12. Design Basis Documents?
☐ Yes ☒ No

13. Safety Designation
☐ SC ☐ SS ☐ GS ☒ N/A

14. Expedited / Off-Shift ECN?
☐ Yes ☒ No

15a. Work Package Number
N/A

15b. Modification Work Completed
N/A
Responsible Engineer / Date

15c. Restored to Original Status (TM)
N/A
Responsible Engineer / Date

16. Fabrication Support ECN?
☐ Yes ☒ No

17. Description of the Change (Use ECN Continuation pages, as needed)

Complete revision of HNF-EP-0182, Waste Tank Summary

Tables and text updated to reflect status as of October 31, 2003.

18. Justification of the Change (Use ECN Continuation pages, as needed)

DOE-ORP requires this document to be revised and issued monthly.

19. ECN Category
☒ Direct Revision
☐ Supplemental
☐ Void/Cancel

ECN Type
☐ Supercedure
☐ Closure
☐ Change Prior

20. Distribution

Name	MSIN	Name	MSIN

Distribution list follows document

Release Stamp
DEC 11 2003
DATE:
STA: 4
HANFORD RELEASE
ID: 8

ENGINEERING CHANGE NOTICE

☒ DM ☐ FM ☐ TM

1a. **ECN** 720095 **R** 10

1b. **Proj. ECN** W- - R

21. **Engineering Check** *Record Information on the ECN-6 Form as required*	22. **Design Verification Required?** ☐ Yes ☒ No If Yes, as a minimum attach the one page checklist from TFC-ENG-DESIGN-P-17.	23. **Closeout / Cancel / Void** ☐ Yes ☒ No If Yes, Record Information on the ECN-7 Form and attach form(s).

24. **Revisions Planned** (Include a brief description of the contents of each revision)

Document will be revised monthly in 2003

Note: All Revisions shall have the approvals of the affected organizations as identified in block 10 "Approval Designator," on page 1 of this ECN.

25a. **Commercial Grade Item Dedication Numbers** (associated with this design change)	25b. **Engineering Data Transmittal Numbers** (associated with this design change, e.g., new drawings, new documents)
N/A	N/A

26a. **Design Cost Estimate**	26b. **Materials / Procurement Costs**	26c. Estimated Labor Hours
N/A	N/A	**N/A**

27. **Field Change Notice(s) Used?** ☐ Yes ☒ No If Yes, Record Information on the ECN-8 or ECN-9 Form, attach form(s), and identify permanent changes.	NOTE: ECNs are required to record and approve all FCNs issued. If the FCNs have not changed the original design media then they are just incorporated into the design media via an ECN. If the FCN did change the original design media then the ECN will include the necessary engineering changes to the original design media.

28. **Approvals**

Facility/Project Signatures		Date	A/E Signatures		Date
Design Authority			Originator/Design Agent		
Team Lead/Lead Engr.	BM Hanlon	11/25/03	Professional Engineer		
Resp. Engineer	BM Hanlon	11/25/03	Project Engineer		
Resp. Manager	NW Kirch	12/11/03	Quality Assurance		
Quality Assurance			Safety		
IS&H Engineer			Designer		
NS&L Engineer			Environ. Engineer		
Environ. Engineer			Other		
Project Engineer			Other		
Design Checker	MA Knight	12/8/03	*DEPARTMENT OF ENERGY / OFFICE OF RIVER PROTECTION*		
Design Verifier			Signature or a Control Number that tracks the Approval Signature		
Operations					
Radcon			ADDITIONAL SIGNATURES		
EQRG					
Other					

ECN - 5 DRAWING / DOCUMENT CHANGE LIST FORM	1a. ECN 720095 R 10
Sheet 1 of ECN – 5 Page 3 of 6 ☒ DM ☐ FM ☐ TM	1b. Proj. ECN W- - R

List of Engineering Drawings/Documents Changed (Use the attached checklist for guidance)

Dwg./Doc. Number (Sheet/Page, Rev)	Title/Type	Shared	PC-002/ SDD/ HNF-3240/ HNF-4184	Existing Change Document Nos.
HNF-EP-0182, Rev. 186	Waste Tank Summary Report for Month Ending September 30, 2003	☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

Submitted to Document Service Center *Prior* to ECN Release?

☐ Yes ☒ No

List of Non-Engineering Documents Needing Change

Document Number/Revision, Sheet/Page (If Available)	Document Title	Document Owner (Organization)	Individual Notified	Method	Date Notified

ECN - 5 DRAWING / DOCUMENT CHANGE LIST FORM Sheet 2 of ECN – 5 Page 4 of 6 ☒ DM ☐ FM ☐ TM	1a. ECN 720095 R 10 1b. Proj. ECN W- - R

Drawings/Documents to be Modified Checklist

System Design Description	☐ Yes ☐ No ☒ N/A	Security Plan	☐ Yes ☐ No ☒ N/A
Functional Design Criteria	☐ Yes ☐ No ☒ N/A	Emergency Plan	☐ Yes ☐ No ☒ N/A
Functional Requirements	☐ Yes ☐ No ☒ N/A	Calculations (General)	☐ Yes ☐ No ☒ N/A
Specification (Equipment or Operating)	☐ Yes ☐ No ☒ N/A	Operating Procedure	☐ Yes ☐ No ☒ N/A
Criticality Specification	☐ Yes ☐ No ☒ N/A	System / Subsystem Specifications	☐ Yes ☐ No ☒ N/A
Design Report	☐ Yes ☐ No ☒ N/A	Material Specification / BOM	☐ Yes ☐ No ☒ N/A
Training Plan	☐ Yes ☐ No ☒ N/A	Sampling Plan	☐ Yes ☐ No ☒ N/A
Equipment Specification	☐ Yes ☐ No ☒ N/A	Inspection Plan	☐ Yes ☐ No ☒ N/A
Procurement Specification	☐ Yes ☐ No ☒ N/A	Spare Parts List	☐ Yes ☐ No ☒ N/A
Construction Specification	☐ Yes ☐ No ☒ N/A	Test Specification	☐ Yes ☐ No ☒ N/A
Vendor Information	☐ Yes ☐ No ☒ N/A	Acceptance Test Plan	☐ Yes ☐ No ☒ N/A
Design Drawings	☐ Yes ☐ No ☒ N/A	Acceptance Test Procedure	☐ Yes ☐ No ☒ N/A
Safety Analysis / FSAR / SAR / DSA	☐ Yes ☐ No ☒ N/A	Pre-Operational Test Procedure	☐ Yes ☐ No ☒ N/A
Technical Safety Requirement	☐ Yes ☐ No ☒ N/A	Operation Test Plan	☐ Yes ☐ No ☒ N/A
Master Equipment List	☐ Yes ☐ No ☒ N/A	Operational Test Procedure	☐ Yes ☐ No ☒ N/A
Safety Equipment List	☐ Yes ☐ No ☒ N/A	ASME Coded Item / Vessel	☐ Yes ☐ No ☒ N/A
Functional Analysis	☐ Yes ☐ No ☒ N/A	Automated Control Configuration Plan	☐ Yes ☐ No ☒ N/A
Environmental Requirement / Review	☐ Yes ☐ No ☒ N/A	Computer / Automated Control Software Plan	☐ Yes ☐ No ☒ N/A
Scope Description Document	☐ Yes ☐ No ☒ N/A	Process Control Plan	☐ Yes ☐ No ☒ N/A
Seismic / Stress / Structural Analysis	☐ Yes ☐ No ☒ N/A	Process Control Procedure	☐ Yes ☐ No ☒ N/A
Engineering Study	☐ Yes ☐ No ☒ N/A	Purchase Requisition	☐ Yes ☐ No ☒ N/A
Interface Control Drawing / Document	☐ Yes ☐ No ☒ N/A	Hazards Review	☐ Yes ☐ No ☒ N/A
Maintenance Procedure(s)	☐ Yes ☐ No ☒ N/A	JCS PM Activity Datasheet	☐ Yes ☐ No ☒ N/A
Setpoint / Tolerance Document	☐ Yes ☐ No ☒ N/A		☐ Yes ☐ No ☒ N/A
	☐ Yes ☐ No ☒ N/A		☐ Yes ☐ No ☒ N/A
	☐ Yes ☐ No ☒ N/A		☐ Yes ☐ No ☒ N/A

ECN - 6 ENGINEERING CHECK LIST	1a. ECN 720095 R 10
Sheet 1 of ECN – 6 Page 5 of 6 ☒ DM ☐ FM ☐ TM	1b. Proj. ECN W- - R

Design Details/Attributes (to be filled out by the change originator) identified in the ECN.			
1. Issue/Problem Statement included	☒ Yes ☐ No ☐ N/A	*21. Basis for Selected Alternative explained, including assumptions*	☐ Yes ☐ No ☒ N/A
2. Safety/Commitment/Programmatic Impacts identified – NEPA Documentation completed	☐ Yes ☐ No ☒ N/A	*22. Potential Component/System Impacts identified and resolved*	☐ Yes ☐ No ☒ N/A
3. System/Equipment/Personnel Impacts identified	☐ Yes ☐ No ☒ N/A	*23. Potential Software Impacts identified and resolved*	☐ Yes ☐ No ☒ N/A
4. Technical Evaluation included	☐ Yes ☐ No ☒ N/A	*24. Potential Safety Impacts are identified and resolved (e.g., energized electrical equipment)*	☐ Yes ☐ No ☒ N/A
5. Compliance w/ Design Basis identified	☐ Yes ☐ No ☒ N/A	*25. Modification is Constructible and can be implemented*	☐ Yes ☐ No ☒ N/A
6. Assumptions/Sources clearly identified	☒ Yes ☐ No ☐ N/A	*26. Design considers Operational Impacts*	☐ Yes ☐ No ☒ N/A
7. Affected Documents and Databases clearly identified	☒ Yes ☐ No ☐ N/A	*27. Contamination Controls are planned*	☐ Yes ☐ No ☒ N/A
8. Inputs Verified	☒ Yes ☐ No ☐ N/A	*28. Pre-Installation/Mockup/Prototype Testing planned*	☐ Yes ☐ No ☒ N/A
9. Required Function(s) / changes clearly identified	☐ Yes ☐ No ☒ N/A	*29. Sketches/Drawings for Tools/Fabricated Components included*	☐ Yes ☐ No ☒ N/A
10. Safety Basis/Commitments/Concerns evaluated	☐ Yes ☐ No ☒ N/A	*30. Hardware Design described*	☐ Yes ☐ No ☒ N/A
11. Application of Industry Standards/Codes explained	☐ Yes ☐ No ☒ N/A	*31. Software/Firmware Design described*	☐ Yes ☐ No ☒ N/A
12. Proper Analytical Techniques employed	☐ Yes ☐ No ☒ N/A	*32. Inspections (per Codes & Standards) / Quality Checks included*	☐ Yes ☐ No ☒ N/A
13. Interfaces evaluated and identified	☐ Yes ☐ No ☒ N/A	*33. Dimensions and Tolerances included*	☐ Yes ☐ No ☒ N/A
14. Material/Component Compatibility evaluated	☐ Yes ☐ No ☒ N/A	*34. Sketches/Drawings for Installation included*	☐ Yes ☐ No ☒ N/A
15. ALARA/Radiological controls/chemical hazards evaluated	☐ Yes ☐ No ☒ N/A	*35. Housekeeping/Personnel Safety Requirements identified*	☐ Yes ☐ No ☒ N/A
16. Human/Machine Interface evaluated	☐ Yes ☐ No ☒ N/A	*36. Walkdown(s) performed/Labeling Correct*	☐ Yes ☐ No ☒ N/A
17. Program impacts evaluated	☐ Yes ☐ No ☒ N/A	*37. Acceptance Test generated and Acceptance Criteria included*	☐ Yes ☐ No ☒ N/A
18. Calculations updated	☐ Yes ☐ No ☒ N/A	*38. M&TE Requirements identified*	☐ Yes ☐ No ☒ N/A
19. Alternatives described/evaluated and address resolution of problem	☐ Yes ☐ No ☒ N/A	*39. Training/Qualification of Test Personnel identified*	☐ Yes ☐ No ☒ N/A
20. Impacts on Maintenance and OPS described	☐ Yes ☐ No ☒ N/A	*40. Safety and Hazards Analysis assessed*	☐ Yes ☐ No ☒

Change Originator (Print/Initial; Sign on page 2 of the ECN)
B. M. Hanlon BMH

Italicized text items need to be addressed. Standard text items need to be addressed as applicable to the change as described.

ECN - 6 ENGINEERING CHECK LIST	1a. ECN 720095 R 10
Sheet 2 of ECN – 6 Page 6 of 6 ☒ DM ☐ FM ☐ TM	1b. Proj. ECN W- - R

Engineering Check Method (Select method(s) and provide explanation of how to be performed):

☒ Peer Check	☐ Engineering Check Team*	☐ Other

Engineering Check Explanation:

* Engineering check team members other than the originating organization normally should consist of personnel representing: Operations, Maintenance & Reliability Engineering, Maintenance Management, Maintenance Crafts, Safety, and Projects.

Engineering Check Details

Engineering inputs correctly identified?	☒ Yes ☐ No ☐ N/A	*Engineering changes properly documented?*	☒ Yes ☐ No ☐ N/A
Calculations checked and are correct?	☒ Yes ☐ No ☐ N/A	*Test procedures reviewed and are correct?*	☐ Yes ☐ No ☒ N/A
Engineering assumptions are stated and verified?	☒ Yes ☐ No ☐ N/A	*Is the engineering change adequate?*	☒ Yes ☐ No ☐ N/A
Engineering criteria incorporated into the engineering change?	☐ Yes ☐ No ☒ N/A	*Is the engineering change complete?*	☒ Yes ☐ No ☐ N/A
Interfaces clearly identified in the engineering change?	☐ Yes ☐ No ☒ N/A	*Is the engineering change correct?*	☒ Yes ☐ No ☐ N/A
EQRG pre-release review required?	☐ Yes ☒ No	EQRG Pre-release Approval (Print/Initial; Sign on page 2 of the ECN)	

Comments:

Document changes reviewed for consistency with source information and confirmed as correct. Document reviewed for editorial adequacy and accuracy. All discrepancies corrected and changes incorported by originator.

Engineering Checker (Print/Initial; Sign on page 2 of the ECN)

M. A. Knight MAK

Italicized text items need to be addressed. Standard text items need to be addressed as applicable to the problem/issue described.

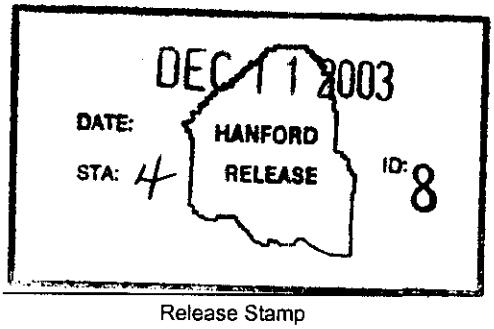
WASTE TANK SUMMARY REPORT FOR MONTH ENDING OCTOBER 31, 2003

BM HANLON
CH2M HILL Hanford Group, Inc.
Richland, WA 99352
U.S. Department of Energy Contract DE-AC27-99RL14047

EDT/ECN: ECN-720095-R1 UC:
Cost Center: Charge Code: 4 JA 12.11.03
B&R Code: Total Pages: 56

Key Words: REPORT, WASTE TANK SUMMARY

Abstract: See page iii of document



12/11/03
Release Approval Date

Release Stamp

Approved For Public Release

RECORD OF REVISION

(1) Document Number: HNF-EP-0182

(2) Title: WASTE TANK SUMMARY REPORT FOR MONTH ENDING OCTOBER 31, 2003

Change Control Record

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
153	(7) EDT-631372	BM Hanlon	JS Garfield
RS 187	Incorporation of ECN-720095, R-10	BM Hanlon	NW KIRCH 12-11-03

Waste Tank Summary Report for Month Ending OCTOBER 31, 2003

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-99RL14047

Waste Tank Summary Report for Month Ending OCTOBER 31, 2003

B. M. Hanlon
CH2M HILL Hanford Group, Inc.

Date Published
December 2003

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

P. O. Box 1500
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-99RL14047

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WASTE TANK SUMMARY REPORT

B. M. Hanlon

ABSTRACT

This report is the official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. This report provides data on each of the existing 177 large underground waste storage tanks and 60 smaller miscellaneous underground storage tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U.S. Department of Energy Order 435.1 (DOE-HQ, August 28, 2001, Radioactive Waste Management, U.S. Department of Energy-Washington, D.C.) requiring the reporting of waste inventories and space utilization for the Hanford Site Tank Farm tanks.

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TABLE OF CONTENTS

METRIC CONVERSION CHART		
1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 gallon	=	3.79 liters
1 ton	=	0.91 metric tons

$$°F = \left(\frac{9}{5}°C\right) + 32$$

1 Btu/h = 0.2931 watts
(International Table)

WASTE TANK SUMMARY REPORT
For Month Ending October 31, 2003

Note: Changes from the previous month are in **bold print**.

I. WASTE TANK STATUS

Double-Shell Tanks (DST)	28 double-shell	10/86 - date last DST tank was completed
Single-Shell Tanks (SST)	149 single-shell	1966 - date last SST tank was completed
Assumed Leaker Tanks	67 single-shell	07/93 - date last Assumed Leaker was identified
Sound Tanks	28 double-shell 82 single-shell	1986 - date DSTs determined sound 07/93 - date last SST determined Sound
Interim Stabilized Tanks[a] (IS)	**140 single-shell**	**10/03 - date last IS occurred**
Not Interim Stabilized[b]	**9 single-shell**	Tanks not Interim Stabilized
Isolated-Intrusion Prevention Completed (IP)[c]	99 single-shell	09/96 - date last IP occurred
Retrieval[c]	9 single-shell	10/02 - date effective
Misc. Underground Storage Tanks (MUST) and Special Surveillance Facilities (Active)	10 Tanks East Area 7 Tanks West Area	03/01 - last date a tank was added or removed from MUST list
Misc. Underground Storage Tanks (IMUST) and Special Surveillance Facilities (Inactive)[d]	18 Tanks East Area 25 Tanks West Area	11/01 - last date a tank was added or removed from IMUST list

[a] Of the 140 tanks classified as Interim Stabilized, 65 are listed as Assumed Leakers. (See Table B-5) **Tanks S-107, SX-102, and U-107 are being evaluated to confirm their Interim Stabilization status but are included in this total.**

[b] Tank BY-106 is an Assumed Leaker . (See Table B-5) The total of 9 tanks includes tanks covered by the Consent Decree which have not been Interim Stabilized; and C-106, which is not included in the Consent Decree and which is not Interim Stabilized; this tank is being pumped for Retrieval. Tanks S-102 and S-112 are in the Retrieval process, and AX-101 is under evaluation for meeting Interim Stabilization criteria.

[c] Tank status for C-104, C-201, C-202, C-203, C-204, S-102, S-103, S-105 and S-106 was changed from Isolated-Intrusion Prevention Completed (IP) to "Retrieval," effective October 2002. **Tank status for C-103, C-105, C-106, and S-112 was changed to "Retrieval" in October 2003.**

[d] Tables C-2 and C-3, the Inactive Miscellaneous Underground Storage Tanks (IMUST) now reflect only those tanks managed by CH2M HILL Hanford Group, Inc. (CH2M HILL).

II. WASTE TANK INVESTIGATIONS

There are no single- or double-shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases, or drywell radiation level increases in excess of established criteria.

There are no single- or double-shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued, or for which a waste tank investigation is in progress for assumed leaks or re-leaks.

III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

A. Single-Shell Tanks Saltwell Pumping

All pumping in Kgallons

Tank Number	Pumping Began	Initial Estimated Pumpable Liquid (HNF-2978, Rev. 5)	Pumped This Month	Total Pumped
241-A-101	May 6, 2000	556	0	542
241-BY-106	July 11, 2001	86	0	90
241-S-101	July 27, 2002	82	0	68
241-S-111	December 18, 2002	109	1	99
241-U-108	December 2, 2001	113	3	112

C. Single-Shell Tanks Under Evaluation for Interim Stabilization

Tank Number	Date Tank Placed Under Evaluation for Interim Stabilization
241-AX-101	June 2, 2003
241-S-107	August 20, 2003 - to confirm IS status
241-SX-102	August 28, 2003 - to confirm IS status
241-U-107	**October 7, 2003 - to confirm IS status**

D. Single-Shell Tanks in Retrieval and Closure:

Tank Number	Status
241-C-103	**Status changed from "PI" to "Retrieval"**
241-C-104	In preparation for retrieval
241-C-105	**Status changed from "PI" to "Retrieval"**
241-C-106	Being pumped
241-C-200 series	In preparation for retrieval
241-S-102	In preparation for retrieval
241-S-103	In retrieval status
241-S-105	In retrieval status
241-S-106	In preparation for retrieval
241-S-112	Being pumped

APPENDIX A

DOUBLE-SHELL TANKS

MONTHLY SUMMARY TABLES

TABLE A-1. INVENTORY AND STATUS BY TANK
DOUBLE-SHELL TANKS
October 31, 2003

TANK	TANK INTEGRITY	WASTE TYPE	TANK LEVEL (inches)	TOTAL WASTE (Kgal)	AVAIL. SPACE (Kgal)	WASTE VOLUMES: SUPER-NATANT LIQUID (Kgal)	WASTE VOLUMES: SLUDGE (Kgal)	WASTE VOLUMES: SALTCAKE (Kgal)	SOLIDS VOLUME UPDATE
241-AN TANK FARM STATUS									
AN-101	SOUND	DSSF	350	962	182	962	0	0	06/30/99
AN-102	SOUND	CC	391	1075	69	941	0	134	12/31/02
AN-103	SOUND	DSS	349	959	185	500	0	459	06/30/99
AN-104	SOUND	DSSF	383	1053	91	608	0	445	06/30/99
AN-105	SOUND	DSSF	410	1127	17	589	0	538	01/31/03
AN-106	SOUND	DN	224	617	527	600	0	17	06/30/99
AN-107	SOUND	CC	402	1105	39	870	0	235	09/30/03
7 DOUBLE-SHELL TANKS			TOTALS:	6898	1110	5070	0	1828	
241-AP TANK FARM STATUS									
AP-101	SOUND	DSSF	404	1111	33	1111	0	0	05/01/89
AP-102	SOUND	DN	101	277	867	254	23	0	05/31/02
AP-103	SOUND	CC	325	895	249	895	0	0	05/31/96
AP-104	SOUND	CC	401	1103	41	1103	0	0	10/13/88
AP-105	SOUND	DSSF	64	175	969	86	0	89	06/30/99
AP-106	SOUND	CP	414	1138	6	1138	0	0	10/13/88
AP-107	SOUND	DN	362	996	148	996	0	0	10/13/88
AP-108	SOUND	DSSF	29	80	1064	80	0	0	10/13/88
8 DOUBLE-SHELL TANKS			TOTALS:	5775	3377	5663	23	89	
241-AW TANK FARM STATUS									
AW-101	SOUND	DSSF	409	1126	18	730	0	396	01/31/03
AW-102	SOUND	EVFD	384	1056	69	1026	30	0	01/31/01
AW-103	SOUND	DSSF/NCRW	400	1100	44	787	273	40	06/30/99
AW-104	SOUND	DSSF	391	1076	68	853	66	157	06/30/99
AW-105	SOUND	DN/NCRW	153	422	722	159	263	0	06/30/99
AW-106	SOUND	SRCVR	404	1112	32	873	0	239	06/30/99
6 DOUBLE-SHELL TANKS			TOTALS:	5892	953	4428	632	832	
241-AY TANK FARM STATUS									
AY-101	SOUND	DC	65	179	822	83	96	0	06/30/99
AY-102	SOUND	DN	301	828	173	658	170	0	09/30/03
2 DOUBLE-SHELL TANKS			TOTALS:	1007	995	741	266	0	
241-AZ TANK FARM STATUS									
AZ-101	SOUND	AW	346	951	50	899	52	0	06/30/98
AZ-102	SOUND	AW	358	985	16	880	105	0	06/30/99
2 DOUBLE-SHELL TANKS			TOTALS:	1936	66	1779	157		
241-SY TANK FARM STATUS									
SY-101	SOUND	CC	135	372	772	97	0	275	06/30/99
SY-102	SOUND	DN/PT	375	1030	128	885	145	0	09/30/03
SY-103	SOUND	CC	268	738	406	396	0	342	06/30/99
3 DOUBLE-SHELL TANKS			TOTALS:	2140	1306	1378	145	617	

NOTES: 1 KGAL DIFFERENCES ARE THE RESULT OF COMPUTER ROUNDING
SUPERNATANT + SLUDGE (includes liquid) + SALTCAKE (includes liquid) = TOTAL WASTE
AVAILABLE SPACE VOLUMES INCLUDE RESTRICTED SPACE
SY-102 - Maximum operating liquid level increased to 1,157,750 gallons effective 7/23/03, Process Memo #2E-03-029.

TABLE A-2. DOUBLE-SHELL TANK SPACE ALLOCATION, INVENTORY AND WASTE RECEIPTS (ALL VOLUMES IN KGALS)

October 31, 2003

TOTAL DST CAPACITY	
(*)NON-AGING =	27,451
AGING =	4,004
TOTAL=	31,455

MONTHLY INVENTORY CHANGE	
INVENTORY ON 10/31/03	23,648
INVENTORY ON 09/30/03	23,398
CHANGE =	250

CALCULATION OF REMAINING SPACE	
TOTAL DST CAPACITY =	31,455
WASTE INVENTORY =	-23,648
DEDICATED OPERATIONAL SPACE =	-1,623
(**) RESTRICTED USAGE SPACE =	-1,971
(***)EMERGENCY SPACE ALLOCATION =	-1,200
REMAINING AVAILABLE SPACE =	3,013

(*) SY-102 maximum operating limit increased to 1158 kgal on July 23, 2003 per Process Memo #2E-03-029.
(**) Restricted Usage Space adjusted in December 2002 to align with DOE requirements on Restricted Usage Space.
(***) Emergency Space Allocation adjusted in July 2003 per HNF-3484 Rev. 4, includes space for WTP returns.

OCTOBER DST WASTE RECEIPTS					
FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
SALTWELL LIQUID (WEST)	11	SLURRY	2	SLURRY	14
(*)SALTWELL LIQUID (EAST)	23	CONDENSATE	12	CONDENSATE	12
TANK FARMS	41	INSTRUMENTATION	0	INSTRUMENTATION	0
242-A	0	UNKNOWN	1	UNKNOWN	3
C-106	146				
S-112	43				
TOTAL =	264	TOTAL=	15	TOTAL=	29

(*) transfer from 244-BX to tank AP-107 (includes flush)

PROJECTED VERSUS ACTUAL WASTE VOLUMES						
	ACTUAL DST WASTE RECEIPTS	PROJECTED DST WASTE RECEIPTS (1)	MISC. DST CHANGES (+/-)	WVR	NET DST CHANGE	TOTAL DST VOLUME
10/03	264	N/A	-14	0	250	23,648
11/03	0	N/A	0	0	0	23,648
12/03	0	N/A	0	0	0	23,648
01/04	0	N/A	0	0	0	23,648
02/04	0	N/A	0	0	0	23,648
03/04	0	N/A	0	0	0	23,648
04/04	0	N/A	0	0	0	23,648
05/04	0	N/A	0	0	0	23,648
06/04	0	N/A	0	0	0	23,648
07/04	0	N/A	0	0	0	23,648
08/04	0	N/A	0	0	0	23,648
09/04	0	N/A	0	0	0	23,648

(1) The "PROJECTED DST WASTE RECEIPTS" and "WVR" numbers will be updated once the BCR-04-001 HTWOS Case Results have been verified.
(2) Total Waste Volume Reduction (WVR) through the 242A Evaporator since restart on 4/15/94 = 13,324 kgals.

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APPENDIX B

SINGLE-SHELL TANKS

MONTHLY SUMMARY TABLES

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2003

Official waste volume estimates from Best-Basis Inventory baseline, January 1, 2002; HNF-2978, latest update; and RPP-5556.

Sludge and Saltcake volumes include any Retained Gas, with the exception of AX-101.

				WASTE VOLUMES							
TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE
241-A TANK FARM STATUS											
A-101	SOUND	/PI	395	-	-	0	542	-	3	392	09/30/03
A-102	SOUND	IS/PI	40	3	9	0	40	12	0	37	01/31/03
A-103	ASMD LKR	IS/IP	371	5	87	0	111	92	2	364	01/01/02
A-104	ASMD LKR	IS/IP	28	0	0	0	0	0	28	0	01/27/78
A-105	ASMD LKR	IS/IP	37	0	0	0	0	0	37	0	10/31/00
A-106	SOUND	IS/IP	79	0	9	0	0	9	50	29	01/01/02
6 TANKS - TOTAL			950						120	822	
241-AX TANK FARM STATUS											
AX-101	SOUND	/PI	319	-	-	0	369	-	3	316	04/30/03
AX-102	ASMD LKR	IS/IP	30	0	0	0	13	0	6	24	01/01/02
AX-103	SOUND	IS/IP	107	0	22	0	0	22	8	99	09/30/03
AX-104	ASMD LKR	IS/IP	7	0	0	0	0	0	7	0	01/01/02
4 TANKS - TOTAL			463						24	439	
241-B TANK FARM STATUS											
B-101	ASMD LKR	IS/IP	109	0	20	0	0	20	28	81	01/01/02
B-102	SOUND	IS/IP	32	4	7	0	0	11	0	28	06/30/99
B-103	ASMD LKR	IS/IP	56	0	10	0	0	10	1	55	01/01/02
B-104	SOUND	IS/IP	374	0	45	0	0	45	309	65	01/01/02
B-105	ASMD LKR	IS/IP	290	0	20	0	0	20	28	262	01/01/02
B-106	SOUND	IS/IP	122	1	8	0	0	9	121	0	01/01/02
B-107	ASMD LKR	IS/IP	161	0	23	0	0	23	86	75	01/01/02
B-108	SOUND	IS/IP	91	0	19	0	0	19	27	64	01/31/03
B-109	SOUND	IS/IP	125	0	23	0	0	23	50	75	01/01/02
B-110	ASMD LKR	IS/IP	245	1	27	0	0	28	244	0	01/01/02
B-111	ASMD LKR	IS/IP	242	1	23	0	0	24	241	0	01/01/02
B-112	ASMD LKR	IS/IP	35	3	2	0	0	5	15	17	01/01/02
B-201	ASMD LKR	IS/IP	30	0	5	0	0	5	30	0	01/01/02
B-202	SOUND	IS/IP	29	0	4	0	0	4	29	0	01/01/02
B-203	ASMD LKR	IS/IP	52	1	5	0	0	6	51	0	01/01/02
B-204	ASMD LKR	IS/IP	51	1	5	0	0	6	50	0	01/01/02
16 TANKS - TOTAL			2044						1310	722	
241-BX TANK FARM STATUS											
BX-101	ASMD LKR	IS/IP/CCS	48	0	4	0	0	4	48	0	01/01/02
BX-102	ASMD LKR	IS/IP/CCS	112	0	0	0	0	0	112	0	04/28/02
BX-103	SOUND	IS/IP/CCS	73	11	4	0	0	15	62	0	11/29/83
BX-104	SOUND	IS/IP/CCS	100	3	4	0	17	7	97	0	01/01/02
BX-105	SOUND	IS/IP/CCS	72	5	4	0	15	9	67	0	01/01/02
BX-106	SOUND	IS/IP/CCS	38	0	4	0	14	4	38	0	01/01/95
BX-107	SOUND	IS/IP/CCS	347	0	37	0	23	37	347	0	09/18/90
BX-108	ASMD LKR	IS/IP/CCS	31	0	4	0	0	4	31	0	01/31/01
BX-109	SOUND	IS/IP/CCS	193	0	25	0	8	25	193	0	09/17/90
BX-110	ASMD LKR	IS/IP/CCS	205	1	35	0	2	36	65	139	01/01/01
BX-111	ASMD LKR	IS/IP/CCS	189	0	6	0	117	6	32	157	01/01/02
BX-112	SOUND	IS/IP/CCS	164	1	9	0	4	10	163	0	01/01/02
12 TANKS - TOTAL			1572						1255	296	

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2003

Official waste volume estimates from Best-Basis Inventory baseline, January 1, 2002; HNF-2978, latest update; and RPP-5556. Sludge and Saltcake volumes include Retained Gas

				WASTE VOLUMES							
TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE
241-BY TANK FARM STATUS											
BY-101	SOUND	IS/IP	370	0	24	0	36	24	37	333	01/01/02
BY-102	SOUND	IS/PI	277	0	40	0	159	40	0	277	05/01/95
BY-103	ASMD LKR	IS/PI	417	0	58	0	96	58	9	408	01/31/03
BY-104	SOUND	IS/IP	358	0	51	0	330	51	45	313	01/01/02
BY-105	ASMD LKR	IS/PI	481	0	47	0	45	47	48	433	03/31/03
BY-106	ASMD LKR	/PI	471	-	-	0	90	-	32	439	09/30/03
BY-107	ASMD LKR	IS/IP	271	0	42	0	56	42	15	256	01/31/03
BY-108	ASMD LKR	IS/IP	222	0	33	0	28	33	40	182	01/01/02
BY-109	SOUND	IS/PI	277	0	37	0	157	37	24	253	01/01/02
BY-110	SOUND	IS/IP	366	0	20	0	213	20	43	323	01/01/02
BY-111	SOUND	IS/IP	302	0	14	0	313	14	0	302	01/01/02
BY-112	SOUND	IS/IP	286	0	24	0	116	24	2	284	03/31/02
12 TANKS - TOTAL			4098						295	3803	
241-C TANK FARM STATUS											
C-101	ASND LKR	IS/IP	88	0	4	0	0	4	88	0	11/29/83
C-102	SOUND	IS/IP	316	0	62	0	47	62	316	0	09/30/95
C-103	SOUND	IS/R	73	1	10	0	114	11	72	0	08/31/03
C-104	SOUND	IS/R	259	0	29	0	0	29	259	0	01/01/02
C-105	SOUND	IS/R	132	0	10	0	0	10	132	0	02/29/00
C-106	SOUND	/R	23	-	-	146	287	-	7	0	10/31/03
C-107	SOUND	IS/IP	248	0	30	0	41	30	248	0	01/01/02
C-108	SOUND	IS/IP	66	0	4	0	0	4	66	0	02/24/84
C-109	SOUND	IS/IP	64	0	4	0	0	4	64	0	01/31/03
C-110	ASND LKR	IS/IP	178	1	37	0	16	38	177	0	06/14/95
C-111	ASND LKR	IS/IP	58	0	4	0	0	4	58	0	01/31/03
C-112	SOUND	IS/IP	104	0	6	0	0	6	104	0	09/18/90
C-201	ASND LKR	IS/R	1	0	0	0	0	0	1	0	01/01/02
C-202	ASND LKR	IS/R	1	0	0	0	0	0	1	0	01/19/79
C-203	ASND LKR	IS/R	3	0	0	0	0	0	3	0	01/31/03
C-204	ASND LKR	IS/R	2	0	0	0	0	0	2	0	01/31/03
16 TANKS - TOTAL			1616						1598	0	
241-S TANK FARM STATUS											
S-101	SOUND	/PI	351	-	-	0	68	-	122	229	09/30/03
S-102	SOUND	/R	438	Retrieval in Progress					22	416	06/30/03
S-103	SOUND	IS/R	238	1	45	0	24	46	9	228	01/31/03
S-104	ASMD LKR	IS/IP	288	0	49	0	0	49	132	156	12/20/84
S-105	SOUND	IS/R	406	0	42	0	114	42	2	404	01/01/02
S-106	SOUND	IS/R	455	0	26	0	204	26	0	455	02/28/01
S-107	SOUND	IS/PI	311	-	-	0	82	-	292	19	09/30/03
S-108	SOUND	IS/PI	550	0	4	0	200	4	5	545	01/01/02
S-109	SOUND	IS/PI	533	0	16	0	34	16	13	520	06/30/01
S-110	SOUND	IS/PI	389	0	30	0	203	30	96	293	01/01/02
S-111	SOUND	/PI	414	-	-	1	99	-	75	339	10/31/03
S-112	SOUND	/R	578	Retrieval in Progress					6	572	10/31/03
12 TANKS TOTAL			4951						774	4176	

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2003

Official waste volume estimates are from the Best-Basis Inventory dated January 1, 2002; HNF-2978, latest update, and RPP-5556. Sludge and Saltcake volumes including any Retained Gas.

				WASTE VOLUMES							
TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE
241-SX TANK FARM STATUS											
SX-101	SOUND	IS/PI	418	0	43	0	33	44	144	274	08/31/03
SX-102	SOUND	/PI	409	-	-	0	98	-	55	354	08/31/03
SX-103	SOUND	IS /PI	509	0	40	0	134	40	78	431	09/30/03
SX-104	ASMD LKR	IS/PI	446	0	48	0	231	48	136	310	04/30/00
SX-105	SOUND	IS /PI	375	0	39	0	153	39	63	312	12/31/02
SX-106	SOUND	IS/PI	396	0	37	0	148	37	0	396	01/31/03
SX-107	ASMD LKR	IS/IP	95	0	7	0	0	7	79	16	01/01/02
SX-108	ASMD LKR	IS/IP	73	0	0	0	0	0	73	0	01/01/02
SX-109	ASMD LKR	IS/IP	241	0	0	0	0	0	58	183	01/01/02
SX-110	ASMD LKR	IS/IP	56	0	0	0	0	0	29	27	01/01/02
SX-111	ASMD LKR	IS/IP	115	0	11	0	0	11	76	39	01/01/02
SX-112	ASMD LKR	IS/IP	75	0	6	0	0	6	56	19	01/01/02
SX-113	ASMD LKR	IS/IP	19	0	0	0	0	0	19	0	01/01/02
SX-114	ASMD LKR	IS/IP	155	0	30	0	0	30	41	114	01/31/02
SX-115	ASMD LKR	IS/IP	4	0	0	0	0	0	4	0	01/01/02
15 TANKS - TOTALS:			3386						911	2475	
241-T TANK FARM STATUS											
T-101	ASMD LKR	IS/PI	100	0	16	0	25	16	37	63	01/01/02
T-102	SOUND	IS/IP	32	13	3	0	0	16	19	0	08/31/84
T-103	ASMD LKR	IS/IP	27	4	3	0	0	7	23	0	11/29/83
T-104	SOUND	IS/PI	317	0	31	0	150	31	317	0	11/30/99
T-105	SOUND	IS/IP	98	0	5	0	0	5	98	0	05/29/87
T-106	ASMD LKR	IS/IP	22	0	0	0	0	0	22	0	01/01/01
T-107	ASMD LKR	IS/PI	173	0	34	0	11	34	173	0	05/31/96
T-108	ASMD LKR	IS/IP	16	0	4	0	0	4	5	11	01/01/01
T-109	ASMD LKR	IS/IP	62	0	11	0	0	11	0	62	01/01/02
T-110	SOUND	IS/IP	370	1	48	0	50	49	369	0	03/31/02
T-111	ASMD LKR	IS/PI	447	0	38	0	10	38	447	0	01/01/02
T-112	SOUND	IS/IP	67	7	4	0	0	11	60	0	04/28/82
T-201	SOUND	IS/IP	31	2	4	0	0	6	29	0	01/01/02
T-202	SOUND	IS/IP	21	0	3	0	0	3	21	0	07/12/81
T-203	SOUND	IS/IP	37	0	5	0	0	5	37	0	01/01/02
T-204	SOUND	IS/IP	37	0	5	0	0	5	37	0	01/01/02
16 TANKS - TOTAL:			1857						1694	136	
241-TX TANK FARM STATUS											
TX-101	SOUND	IS/IP/CCS	91	0	7	0	0	7	74	17	01/01/02
TX-102	SOUND	IS/IP/CCS	217	0	27	0	94	27	2	215	03/31/03
TX-103	SOUND	IS/IP/CCS	145	0	18	0	68	18	0	145	01/01/02
TX-104	SOUND	IS/IP/CCS	68	2	9	0	4	11	34	32	01/01/02
TX-105	ASMD LKR	IS/IP/CCS	576	0	25	0	122	25	8	568	01/01/02
TX-106	SOUND	IS/IP/CCS	348	0	37	0	135	37	5	343	03/31/02
TX-107	ASMD LKR	IS/IP/CCS	29	0	7	0	0	7	0	29	01/31/03
TX-108	SOUND	IS/IP/CCS	129	0	8	0	14	8	6	123	01/01/02
TX-109	SOUND	IS/IP/CCS	363	0	6	0	72	6	363	0	01/01/02
TX-110	ASMD LKR	IS/IP/CCS	467	0	14	0	115	14	37	430	01/01/02
TX-111	SOUND	IS/IP/CCS	365	0	10	0	98	10	43	322	01/01/02
TX-112	SOUND	IS/IP/CCS	634	0	26	0	94	26	0	634	01/01/02
TX-113	ASMD LKR	IS/IP/CCS	639	0	18	0	19	18	93	546	01/01/02
TX-114	ASMD LKR	IS/IP/CCS	532	0	17	0	104	17	4	528	01/01/02
TX-115	ASMD LKR	IS/IP/CCS	554	0	25	0	99	25	9	545	01/31/03
TX-116	ASMD LKR	IS/IP/CCS	599	0	21	0	24	21	66	533	04/30/03
TX-117	ASMD LKR	IS/IP/CCS	481	0	10	0	54	10	29	452	01/01/02
TX-118	SOUND	IS/IP/CCS	256	0	31	0	89	31	0	256	01/01/02
18 TANKS - TOTAL:			6493						773	5718	

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2003

Official waste volume estimates are from the Best-Basis Inventory dated January 1, 2002, HNF-2978, latest update; and RPP-5556. Sludge and Saltcake volumes include any Retained Gas.

				WASTE VOLUMES							
TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE
				241-TY TANK FARM STATUS							
TY-101	ASMD LKR	IS/IP/CCS	119	0	2	0	8	2	72	47	01/31/03
TY-102	SOUND	IS/IP/CCS	69	0	13	0	7	13	0	69	01/01/02
TY-103	ASMD LKR	IS/IP/CCS	155	0	23	0	12	23	103	52	01/01/02
TY-104	ASMD LKR	IS/IP/CCS	44	1	4	0	0	5	43	0	03/31/02
TY-105	ASMD LKR	IS/IP/CCS	231	0	12	0	4	12	231	0	04/28/82
TY-106	ASMD LKR	IS/IP/CCS	16	0	1	0	0	1	16	0	01/01/02
6 TANKS - TOTALS			634						465	168	
				241-U TANK FARM STATUS							
U-101	ASMD LKR	IS/IP	24	0	4	0	0	4	24	0	01/01/02
U-102	SOUND	IS /PI	327	1	37	0	87	38	43	283	12/31/02
U-103	SOUND	IS/PI	417	1	33	0	99	34	11	405	12/31/02
U-104	ASMD LKR	IS/IP	122	0	0	0	0	0	122	0	01/01/02
U-105	SOUND	IS/PI	353	0	44	0	88	44	32	321	03/30/01
U-106	SOUND	IS/PI	172	3	36	0	39	39	0	169	01/31/03
U-107	SOUND	IS/PI	287	-	-	2	119	-	15	272	09/30/03
U-108	SOUND	/PI	356	-	-	3	112	-	29	327	10/31/03
U-109	SOUND	IS/PI	401	0	47	0	78	47	35	366	04/30/02
U-110	ASMD LKR	IS/PI	176	0	16	0	0	16	176	0	01/01/02
U-111	SOUND	IS/PI	222	0	31	0	85	31	26	196	08/31/03
U-112	ASMD LKR	IS/IP	45	0	4	0	0	4	45	0	02/10/84
U-201	SOUND	IS/IP	4	1	1	0	0	2	3	0	06/30/03
U-202	SOUND	IS/IP	4	1	0	0	0	1	3	0	06/30/03
U-203	SOUND	IS/IP	3	1	0	0	0	1	2	0	06/30/03
U-204	SOUND	IS/IP	3	1	0	0	0	1	2	0	06/30/03
16 TANKS - TOTALS			2916						568	2339	

Note: +/- 1 Kgal difference in volumes is due to rounding.

TABLE B-2. SINGLE-SHELL TANKS STABILIZATION STATUS SUMMARY

October 31, 2003

Partial Interim Isolated (PI)

EAST AREA
A-101
A-102
AX-101
BY-102
BY-103
BY-105
BY-106
BY-109
C-103
C-105
C-106
East Area 11

WEST AREA
S-101
S-107
S-108
S-109
S-110
S-111
S-112
SX-101
SX-102
SX-103
SX-104
SX-105
SX-106
T-101
T-104
T-107
T-110
T-111
U-102
U-103
U-105
U-106
U-107
U-108
U-109
U-110
U-111
West Area 26
Total 37

Intrusion Prevention Completed (IP)

EAST AREA
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-104
BY-107
BY-108
BY-110
BY-111
BY-112
C-101
C-102
C-107
C-108
C-109
C-110
C-111
C-112
East Area 50

WEST AREA
S-104
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-102
T-103
T-105
T-106
T-108
T-109
T-112
T-201
T-202
T-203
T-204
TX-FARM - 18 tanks
TY-FARM - 6 tanks
U-101
U-104
U-112
U-201
U-202
U-203
U-204
West Area 52
Total 102

Retrieval (R)

East Area	West Area
C-103	S-102
C-104	S-103
C-105	S-105
C-106	S-106
C-201	S-112
C-202	
C-203	
C-204	
East Area 8	West Area 5
	Total 13

Interim Stabilized (IS)

EAST AREA
A-102
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-102
BY-103
BY-104
BY-105
BY-107
BY-108
BY-109
BY-110
BY-111
BY-112
C-101
C-102
C-103
C-104
C-105
C-107
C-108
C-109
C-110
C-111
C-112
C-201
C-202
C-203
C-204
East Area 63

WEST AREA
S-103
S-104
S-105
S-106
S-107
S-108
S-109
S-110
SX-102
SX-103
SX-104
SX-105
SX-106
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-Farm - 16 tanks
TX-Farm - 18 tanks
TY-Farm - 6 tanks
U-101
U-102
U-103
U-104
U-105
U-106
U-107
U-109
U-110
U-111
U-112
U-201
U-202
U-203
U-204
West Area 77
Total 140

Controlled, Clean, and Stable (CCS)

East Area	West Area
BX-Farm - 12 Tanks	TX-Farm - 18 Tanks
	TY Farm - 6 Tanks
East Area 12	West Area 24
	Total 36

CCS activites have been deferred until funding is available

TABLE B-3. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS

October 31, 2003

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
A-101	SOUND	N/A		C-101	ASMD LKR	11/83	AR	T-108	ASMD LKR	11/78	AR
A-102	SOUND	08/89	SN	C-102	SOUND	09/95	JET(2)	T-109	ASMD LKR	12/84	AR
A-103	ASMD LKR	06/88	AR	C-103	SOUND	07/03	JET (20)	T-110	SOUND	01/00	JET(5)
A-104	ASMD LKR	09/78	AR(3)	C-104	SOUND	09/89	SN	T-111	ASMD LKR	02/95	JET
A-105	ASMD LKR	07/79	AR	C-105	SOUND	10/95	AR	T-112	SOUND	03/81	AR(2)(3)
A-106	SOUND	08/82	AR	C-106	SOUND	N/A		T-201	SOUND	04/81	AR (3)
AX-101	SOUND	N/A		C-107	SOUND	09/95	JET	T-202	SOUND	08/81	AR
AX-102	ASMD LKR	09/88	SN	C-108	SOUND	03/84	AR	T-203	SOUND	04/81	AR
AX-103	SOUND	08/87	AR	C-109	SOUND	11/83	AR	T-204	SOUND	08/81	AR
AX-104	ASMD LKR	08/81	AR	C-110	ASMD LKR	05/95	JET	TX-101	SOUND	02/84	AR
B-101	ASMD IKR	03/81	SN	C-111	ASMD LKR	03/84	SN	TX-102	SOUND	04/83	JET
B-102	SOUND	08/85	SN	C-112	SOUND	09/90	AR	TX-103	SOUND	08/83	JET
B-103	ASMD IKR	02/85	SN	C-201	ASMD LKR	03/82	AR	TX-104	SOUND	09/79	SN
B-104	SOUND	06/85	SN	C-202	ASMD LKR	08/81	AR	TX-105	ASMD LKR	04/83	JET
B-105	ASMD IKR	12/84	AR	C-203	ASMD LKR	03/82	AR	TX-106	SOUND	06/83	JET
B-106	SOUND	03/85	SN	C-204	ASMD LKR	09/82	AR	TX-107	ASMD LKR	10/79	AR
B-107	ASMD LKR	03/85	SN	S-101	SOUND	N/A		TX-108	SOUND	03/83	JET
B-108	SOUND	05/85	SN	S-102	SOUND	N/A		TX-109	SOUND	04/83	JET
B-109	SOUND	04/85	SN	S-103	SOUND	04/00	JET (6)	TX-110	ASMD LKR	04/83	JET
B-110	ASMD LKR	12/84	AR	S-104	ASMD LKR	12/84	AR	TX-111	SOUND	04/83	JET
B-111	ASMD LKR	06/85	SN	S-105	SOUND	09/88	JET	TX-112	SOUND	04/83	JET
B-112	ASMD LKR	05/85	SN	S-106	SOUND	02/01	JET (10)	TX-113	ASMD LKR	04/83	JET
B-201	ASMD LKR	08/81	AR (3)	S-107	SOUND	08/03	JET (22)	TX-114	ASMD LKR	04/83	JET
B-202	SOUND	05/85	AR(2)	S-108	SOUND	12/96	JET	TX-115	ASMD LKR	09/83	JET
B-203	ASMD LKR	06/84	AR	S-109	SOUND	06/01	JET (13)	TX-116	ASMD LKR	04/83	JET
B-204	ASMD LKR	06/84	AR	S-110	SOUND	01/97	JET	TX-117	ASMD LKR	03/83	JET
BX-101	ASMD LKR	09/78	AR(3)	S-111	SOUND	N/A		TX-118	SOUND	04/83	JET
BX-102	ASMD LKR	11/78	AR	S-112	SOUND	N/A		TY-101	ASMD LKR	04/83	JET
BX-103	SOUND	11/83	AR(2)(3)	SX-101	SOUND	08/03	JET (21)	TY-102	SOUND	09/79	AR
BX-104	SOUND	09/89	SN	SX-102	SOUND	08/03	JET (23)	TY-103	ASMD LKR	02/83	JET
BX-105	SOUND	03/81	SN	SX-103	SOUND	05/03	JET (18)	TY-104	ASMD LKR	11/83	AR
BX-106	SOUND	07/95	SN	SX-104	ASMD LKR	04/00	JET (7)	TY-105	ASMD LKR	02/83	JET
BX-107	SOUND	09/90	JET	SX-105	SOUND	08/02	JET (16)	TY-106	ASMD LKR	11/78	AR
BX-108	ASMD LKR	07/79	SN	SX-106	SOUND	05/00	JET (8)	U-101	ASMD LKR	09/79	AR
BX-109	SOUND	08/90	JET	SX-107	ASMD LKR	10/79	AR	U-102	SOUND	06/02	JET (15)
BX-110	ASMD LKR	08/85	SN	SX-108	ASMD LKR	08/79	AR	U-103	SOUND	09/00	JET (9)
BX-111	ASMD LKR	03/95	JET	SX-109	ASMD LKR	05/81	AR	U-104	ASMD LKR	10/78	AR
BX-112	SOUND	09/90	JET	SX-110	ASMD LKR	08/79	AR	U-105	SOUND	03/01	JET (11)
BY-101	SOUND	05/84	JET	SX-111	ASMD LKR	07/79	SN	U-106	SOUND	03/01	JET (12)
BY-102	SOUND	04/95	JET	SX-112	ASMD LKR	07/79	AR	U-107	SOUND	10/03	JET (24)
BY-103	ASMD LKR	11/97	JET(2)	SX-113	ASMD LKR	11/78	AR	U-108	SOUND	N/A	
BY-104	SOUND	01/85	JET	SX-114	ASMD LKR	07/79	AR	U-109	SOUND	04/02	JET (14)
BY-105	ASMD LKR	03/03	JET	SX-115	ASMD LKR	09/78	AR(3)	U-110	ASMD LKR	12/84	AR
BY-106	ASMD LKR	N/A		T-101	ASMD LKR	04/93	SN	U-111	SOUND	06/03	JET (19)
BY-107	ASMD LKR	07/79	JET	T-102	SOUND	03/81	AR(2)(3)	U-112	ASMD LKR	09/79	AR
BY-108	ASMD LKR	02/85	JET	T-103	ASMD LKR	11/83	AR	U-201	SOUND	08/79	AR
BY-109	SOUND	07/97	JET	T-104	SOUND	11/99	JET(4)	U-202	SOUND	08/79	SN
BY-110	SOUND	01/85	JET	T-105	SOUND	06/87	AR	U-203	SOUND	08/79	AR
BY-111	SOUND	01/85	JET	T-106	ASMD LKR	08/81	AR	U-204	SOUND	08/79	SN
BY-112	SOUND	06/84	JET	T-107	ASMD LKR	05/96	JET				

LEGEND:

AR = Administratively interim stabilized
JET = Saltwell jet pumped to remove drainable interstitial liquid
SN = Supernatant pumped (Non-Jet pumped)
N/A = Not yet interim stabilized
ASMD LKR = Assumed Leaker

Interim Stabilized Tanks	140
Not Yet Interim Stabilized	9
Total Single-Shell Tanks	149

TABLE B-3. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS

Footnotes: (in chronological order)

(1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.

(2) Although tanks 241-BX-103, T-102, and T-112 met the interim stabilization administrative procedure at the time they were stabilized, they no longer meet the recently updated administrative procedure. The tanks were re-evaluated in 1996 and letter 9654456, J. H. Wicks to J. K. McClusky, DOE-RL, dated September 30, 1996, was issued which recommended that no further pumping be performed on these tanks, based on an economic evaluation.

Document RPP-5556, Rev. 0, "Updated Drainable Interstitial Liquid Volume Estimates for 119 Single-Shell Tanks Declared Stabilized," J. G. Field, February 7, 2000, states that five tanks no longer meet the stabilization criteria (241-BX-103, T-102, and T-112 exceed the supernatant criteria, and BY-103 and C-102 exceed the Drainable Interstitial Liquid [DIL]criteria).

An intrusion investigation was completed on tank 241-B-202 in 1996 because of a detected increase in surface level. As a result of this investigation, it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks.

(3) Earlier versions of HNF-SD-RE-TI-178, "SST Stabilization Record," indicated that original Interim Stabilization data are missing on four tanks: 241-B-201, T-102, T-112, and T-201. HNF-SD-RE-TI-178, Rev. 7, dated February 9, 2001, added three additional tanks to those missing stabilization data: 241-A-104, BX-101, and SX-115.

(4) Tank 241-T-104 was declared Interim Stabilized on November 19, 1999. In-tank video taken October 7, 1999, shows the surface is clearly sludge-type waste with no saltcake present. There is no visible supernatant on the surface. Waste surface appears level across tank with numerous cracks. There is a minimal collapsed area around the saltwell screen, with no visible bottom.

(5) Tank 241-T-110 was declared Interim Stabilized on January 5, 2000, after a major equipment failure. An in-tank video taken October 7, 1999 (pumping was discontinued on August 12, 1999), showed the surface of this tank as smooth, brown-tinted sludge with visible cracks.

(6) Tank 241-S-103 was declared Interim Stabilized on April 18, 2000. The surface is a rough, black and brown-colored waste with yellow patches of saltcake visible throughout. The surface appears to be damp, but not saturated, and shows irregular cracking typically seen with surfaces beginning to dry out. A pool of supernatant (10 feet in diameter, 5 feet deep, 1.0 Kgallons) is visible from video observations.

(7) Tank 241-SX-104 was declared Interim Stabilized on April 26, 2000, after a major equipment failure. The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the surface dried out. The waste surface appears to be dry and shows no standing liquid within the tank.

(8) Tank 241-SX-106 was declared Interim Stabilized on May 5, 2000. The surface is a smooth, white-colored saltcake waste. The surface level slopes slightly from the tank sidewall down to a large depression in the center of the tank. A second depression surrounds both saltwell screens and an abandoned Liquid Observation Well (LOW). The waste surfaces appear dry and show no standing liquid within the tank.

(9) Tank 241-U-103 was declared Interim Stabilized on September 11, 2000. The surface is a brown colored waste with irregular patches of white salt crystal. Approximately 30% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to the first of two depressions in the center of the tank. The waste surface appears dry and shows signs of drying and cracking due to saltwell pumping. LOW readings indicate an average adjusted ILL of 60.2 inches. There is a small pool of supernatant estimated to be 500 gallons.

(10) Tank 241-S-106 was declared Interim Stabilized on February 1, 2001. The surface is a rough, brown and yellow-colored saltcake waste with an irregular surface of mounds and saltcake crystals that were created as the surface was dried out. The waste surface appears to be dry and shows no standing liquid within the tank. There is no evidence of supernatant from video observations. The waste surface slopes gradually from the tank sidewall to the depression in the center of the tank. The depression surrounds both of the saltwell screens, but does not extend around the temperature probe and ENRAF devices.

(11) Tank 241-U-105 was declared Interim Stabilized on March 29, 2001, after a major equipment failure. The surface is a brown colored waste with irregular patches of white salt crystal. Approximately 15% of the surface is covered by the salt formations. The surface level slopes to the first of two depressions in the center of the tank; the first depression is cone shaped and estimated to be 22 feet in diameter. The second depression, inside the first, is cylindrically shaped and has a diameter of approximately 10 feet. Both depressions are centered on the saltwell screen. The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is no visible liquid in the tank.

(12) Tank 241-U-106 was declared Interim Stabilized on March 9, 2001. The surface is a dark brown/yellow colored waste that is covered with many stalagmite-type crystals growing on the surface. The crystals cover approximately 75% of the waste surface. The waste surface is irregular, appears dry, and shows only minimal signs of cracking due to saltwell pumping. The supernatant pool is estimated to be 13.3 feet in diameter based on the visible portion of the saltwell screen. The pool is centered on the saltwell screen.

(13) Tank 241-S-109 was declared Interim Stabilized on June 11, 2001. The surface is primarily a white colored salt crystal with small patches of dark salt visible due to saltwell/sampling activities. Approximately 95% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to a depression in the center of the tank. The waste surface appears rough and dry and shows signs of cracking and slumping due to saltwell pumping.

(14) Tank 241-U-109 was declared Interim Stabilized on April 5, 2002. The declaration letter to DOE was issued on June 20, 2002. The surface is primarily a brown colored waste with irregular patches of white salt crystal. Approximately 70% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to a depression in the center of the tank. The depression is cone shaped and is centered on the saltwell screen. The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is no visible liquid within the tank.

(15) Tank 241-U-102 was declared Interim Stabilized on June 19, 2002. The declaration letter to DOE was issued June 28, 2002. The surface is primarily a gray-brown colored cracked waste with irregular patches of white salt crystal. Approximately 50% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to a depression in the center of the tank. The depression is cone shaped and is centered on the saltwell screen. The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is approximately a 5-foot wide pool of visible liquid within the saltwell screen depression.

(16) Tank 241-SX-105 was declared Interim Stabilized on August 1, 2002; the declaration letter to DOE was issued August 20, 2002. The surface is a rough, yellowish-gray saltcake waste with an irregular surface of visible cracks and shelves due to saltwell pumping. The waste surface appears to be dry and shows no standing water within the tank. The waste surface slopes gradually from the tank sidewall to the center of the tank. There are no large depressions in or around the center of the tank.

(17) Tank 241-BY-105 was declared Interim Stabilized on March 7, 2003; the declaration letter to DOE was issued March 25, 2003. An in-tank video was taken January 5, 2003. The surface is a rough, yellowish brown saltcake waste with an irregular surface of visible lumps and shelves that were created as the surface was dried out by saltwell pumping. The waste surface appears to be dry and shows no standing water within the tank. A large hole around the saltwell screen shows no evidence of supernatant liquid.

(18) Tank 241-SX-103 was declared Interim Stabilized on May 31, 2003; the declaration letter to DOE was issued June 13, 2003. An in-tank video was taken December 31, 2001. The upper waste surface is uneven and rough, with many cracks and shelves due to surface drying caused by saltwell pumping. All estimations regarding waste dimensions were obtained by comparison with known dimensions of installed in-tank equipment.

(19) Tank 241-U-111 was declared Interim Stabilized on June 25, 2003, due to major equipment failure; the declaration letter to DOE was issued July 14, 2003. An in-tank video was taken March 25, 2003. The surface is a dry, crusty, flat surface saltcake waste with a fairly uniform surface of large cracks and pocked holes that were created as the surface was dried out by saltwell pumping. The waste surface is dry and shows no standing water. A hole around the saltwell screen shows no sign of standing water.

(20) Tank 241-C-103 was declared Interim Stabilized on July 11, 2003, due to major equipment failure; the declaration letter to DOE was issued August 13, 2003. An in-tank video was taken March 3, 2003. The surface is a dry-cracked brown sludge type waste, which appears to be relatively level and to have more cracking near the tank walls. There is a roughly 3-foot diameter supernatant pool around the saltwell screen. There are also small supernatant pools around two risers and many liquid pockets across the center waste surface. The ENRAF is out of service and there is no liquid observation well (LOW) installed in the tank.

(21) Tank 241-SX-101 was declared Interim Stabilized on August 14, 2003; the declaration letter to DOE was issued August 22, 2003. An in-tank video was taken August 6, 2003. The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the waste was dried out by saltwell pumping. The waste surface appears to be dry and shows no standing water. A cylindrical pool (approximately 5 foot diameter) around the saltwell screen shows evidence of apparent supernatant liquid, but upon closer examination, was determined to be interstitial liquid.

(22) Tank 241-S-107 was declared Interim Stabilized on August 28, 2003, due to major equipment failure. This tank is in evaluation to confirm interim stabilization criteria have been met.

(23) Tank 241-SX-102 was declared Interim Stabilized on August 28, 2003, due to major equipment failure. This tank is in evaluation to confirm interim stabilization criteria have been met.

(24) Tank 241-U-107 was declared Interim Stabilized on October 7, 2003. This tank is in evaluation to confirm interim stabilization criteria have been met.

TABLE B-4. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES

October 31, 2003

New single-shell tank interim stabilization milestones were negotiated in 1999 and are identified in the "Consent Decree." The Consent Decree was approved on August 16, 1999.

CONSENT DECREE
Attachments A-1 and A-2

The following table is the schedule for pumping liquid waste from the remaining twenty-nine (29) single-shell tanks. This schedule is enforceable pursuant to the terms of the Decree except for the "Projected Pumping Completion Dates," which are estimates only and not enforceable. Also, this schedule does not include tank C-106.

Tank Designation	Projected Pumping Start Date	Actual Pumping Start Date	Projected Pumping Completion Date	Interim Stabilization Date
1. T-104	Already initiated	March 24, 1996	May 30, 1999	November 19, 1999
2. T-110	Already initiated	May 12, 1997	May 30, 1999	January 5, 2000
3. SX-104	Already initiated	September 26, 1997	December 30, 2000	April 26, 2000
4. SX-106	Already initiated	October 6, 1998	December 30, 2000	May 5, 2000
5. S-102	Already initiated	March 18, 1999	March 30, 2001	(Retrieval)
6. S-106	Already initiated	April 16, 1999	March 30, 2001	February 1, 2001
7. S-103	Already initiated	June 4, 1999	March 30, 2001	April 18, 2000
8. U-103 *	June 15, 2000	September 26, 1999	April 15, 2002	September 11, 2000
9. U-105 *	June 15, 2000	December 10, 1999	April 15, 2002	March 29, 2001
10. U-102 *	June 15, 2000	January 20, 2000	April 15, 2002	June 19, 2002
11. U-109 *	June 15, 2000	March 11, 2000	April 15, 2002	April 5, 2002
12. A-101	October 30, 2000	May 6, 2000	September 30, 2003	
13. AX-101	October 30, 2000	July 29, 2000	September 30, 2003	
14. SX-105	March 15, 2001	August 8, 2000	February 28, 2003	August 1, 2002
15. SX-103	March 15, 2001	October 26, 2000	February 28, 2003	May 31, 2003
16. SX-101	March 15, 2001	November 22, 2000	February 28, 2003	August 14, 2003
17. U-106 *	March 15, 2001	August 24, 2000	February 28, 2003	March 9, 2001
18. BY-106	July 15, 2001	July 11, 2001	June 30, 2003	
19. BY-105	July 15, 2001	July 11, 2001	June 30, 2003	March 7, 2003
20. U-108	December 30, 2001	December 2, 2001	August 30, 2003	
21. U-107	December 30, 2001	September 29, 2001	August 30, 2003	**October 7, 2003**
22. S-111	December 30, 2001	December 18, 2001	August 30, 2003	
23. SX-102	December 30, 2001	December 15, 2001	August 30, 2003	August 28, 2003
24. U-111	November 30, 2002	June 14, 2002	September 30, 2003	June 25, 2003
25. S-109	November 30, 2002	September 23, 2000	September 30, 2003	June 11, 2001
26. S-112	November 30, 2002	September 21, 2002	September 30, 2003	(Retrieval)
27. S-101	November 30, 2002	July 27, 2002	September 30, 2003	
28. S-107	November 30, 2002	September 4, 2002	September 30, 2003	August 28, 2003
29. C-103	Pumping operations began in this tank on November 29, 2002, approximately five months ahead of the scheduled start date of April 2003. It is the final tank to begin pumping operations specified in this Decree. Pumping was completed in this tank on March 3, 2003, and a declaration memo that the tank has met interim stabilization criteria was issued on March 7, 2003. This tank was declared Interim Stabilized on July 11, 2003.			

* Tanks containing organic complexants.

Completion of Interim Stabilization. DOE will complete interim stabilization of all 29 single-shell tanks listed above by September 30, 2004.

Percentage of Pumpable Liquid Remaining to be Removed:

93% of Total Liquid	9/30/1999 (1)
38% of Organic Complexed Pumpable Liquids	9/30/2000 (2)
5% of Organic Complexed Pumpable Liquids	9/30/2001 (3)
18% of Total Liquid	9/30/2002 (4)
2% of Total Liquid	9/30/2003 (5)

The "percentage of pumpable liquid remaining to be removed" is calculated by dividing the volume of pumpable liquid remaining to be removed from tanks not yet interim stabilized by the sum of the total amount of liquid that has been pumped and the pumpable liquid that remains to be pumped from all tanks.

(1) The Pumpable Liquid Remaining was reduced to 88% by September 30, 1999. Reference LMHC-9957926 R1, D. I. Allen, LHMC, to D. C. Bryson, DOE-ORP, dated October 26, 1999.

(2) The Complexed Pumpable Liquid Remaining was reduced to 38% by September 15, 2000. Reference CHG-0004752, R. F. Wood, CHG, to J. J. Short, DOE-ORP, dated September 13, 2000.

(3) Reference CHG-0104859, R. F. Wood, CHG, to J. S. O'Connor, DOE-ORP, dated September 20, 2001: this reference states that tanks U-102 and U-109 appear to have met the interim stabilization criteria, thereby reducing the Complexed Pumpable Liquid Remaining to zero. Reference CHG-0202630, dated June 20, 2002, declared tank U-109 Interim Stabilized and confirmed the completion of Consent Decree milestone, Attachment A, Item 11, as well as the partial completion of milestone D-001-004-T01. Reference CHG-0202901, dated June 28, declared tank U-102 Interim Stabilized and confirmed the completion of Consent Decree milestone, Attachment A, Item 10, as well as the partial completion of milestone D-001-004-T01.

(4) The Pumpable Liquid Remaining was reduced to less than 18% of the total liquid by September 30, 2003. Reference CHG-204636, R. F. Wood, CHG, to J. S. O'Connor, DOE-ORP, dated September 30, 2002. The percentage of pumpable liquid remaining was 17.94% or less than 550 Kgallons.

(5) The Pumpable Liquid Remaining was reduced to 2% of the total liquid by August 31, 2003, approximately 30 days ahead of the required completion date of September 30, 2003. The confirmation letter to DOE-ORP will be issued in September 2003. The volume of pumpable liquid remaining in the non-stabilized tanks is slightly less than 2% of the original total pumpable volume.

TABLE B-5. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (Sheet 1 of 6)

October 31, 2003

Tank Number		Date Declared Confirmed or Assumed Leaker (3)	Volume Gallons (2)	Associated KiloCuries 137 Cs (9)	Interim Stabilized Date (11)	Leak Estimate Updated	Leak Estimate Reference
241-A-103		1987	5500 (8)		06/88	1987	(j)
241-A-104		1975	500 to 2500	0.8 to 1.8 (q)	09/78	1983	(a)(q)
241-A-105	(1)	1963	10000 to 277000	85 to 760 (b)	07/79	1991	(b)(c)
241-AX-102		1988	3000 (8)		09/88	1989	(h)
241-AX-104		1977	-- (6)		08/81	1989	(g)
241-B-101		1974	-- (6)		03/81	1989	(g)
241-B-103		1978	-- (6)		02/85	1989	(g)
241-B-105		1978	-- (6)		12/84	1989	(g)
241-B-107		1980	8000 (8)		03/85	1986	(d)(f)
241-B-110		1981	10000 (8)		03/85	1986	(d)
241-B-111		1978	-- (6)		06/85	1989	(g)
241-B-112		1978	2000		05/85	1989	(g)
241-B-201		1980	1200 (8)		08/81	1984	(e)(f)
241-B-203		1983	300 (8)		06/84	1986	(d)
241-B-204		1984	400 (8)		06/84	1989	(g)
241-BX-101		1972	-- (6)		09/78	1989	(g)
241-BX-102		1971	70000	50 (l)	11/78	1986	(d)
241-BX-108		1974	2500	0.5 (l)	07/79	1986	(d)
241-BX-110		1976	-- (6)		08/85	1989	(g)
241-BX-111		1984 (13)	-- (6)		03/95	1993	(g)
241-BY-103		1973	<5000		11/97	1983	(a)
241-BY-105		1984	-- (6)		N/A	1989	(g)
241-BY-106		1984	-- (6)		N/A	1989	(g)
241-BY-107		1984	15100 (8)		07/79	1989	(g)
241-BY-108		1972	<5000		02/85	1983	(a)
241-C-101		1980	20000 (8)(10)		11/83	1986	(d)
241-C-110		1984	2000		05/95	1989	(g)
241-C-111		1968	5500 (8)		03/84	1989	(g)
241-C-201	(4)	1988	550		03/82	1987	(i)
241-C-202	(4)	1988	450		08/81	1987	(i)
241-C-203		1984	400 (8)		03/82	1986	(d)
241-C-204	(4)	1988	350		09/82	1987	(i)
241-S-104		1968	24000 (8)		12/84	1989	(g)
241-SX-104		1988	6000 (8)		04/00	1988	(k)
241-SX-107		1964	<5000		10/79	1983	(a)
241-SX-108	(5)(14)	1962	2400 to 35000	17 to 140 (m)(q)(t)	08/79	1991	(m)(q)(t)
241-SX-109	(5)(14)	1965	<10000	<40 (n)(t)	05/81	1992	(n)(t)
241-SX-110		1976	5500 (8)		08/79	1989	(g)
241-SX-111	(14)	1974	500 to 2000	0.6 to 2.4 (l)(q)(t)	07/79	1986	(d)(q)(t)
241-SX-112	(14)	1969	30000	40 (l)(t)	07/79	1986	(d)(t)
241-SX-113		1962	15000	8 (l)	11/78	1986	(d)
241-SX-114		1972	-- (6)		07/79	1989	(g)
241-SX-115		1965	50000	21 (o)	09/78	1992	(o)
241-T-101		1992	7500 (8)		04/93	1992	(p)
241-T-103		1974	<1000 (8)		11/83	1989	(g)
241-T-106		1973	115000 (8)	40 (l)	08/81	1986	(d)
241-T-107		1984	-- (6)		05/96	1989	(g)
241-T-108		1974	<1000 (8)		11/78	1980	(f)
241-T-109		1974	<1000 (8)		12/84	1989	(g)
241-T-111		1979, 1994 (12)	<1000 (8)		02/95	1994	(f)(r)
241-TX-105		1977	-- (6)		04/83	1989	(g)
241-TX-107	(5)	1984	2500		10/79	1986	(d)
241-TX-110		1977	-- (6)		04/83	1989	(g)
241-TX-113		1974	-- (6)		04/83	1989	(g)
241-TX-114		1974	-- (6)		04/83	1989	(g)
241-TX-115		1977	-- (6)		09/83	1989	(g)
241-TX-116		1977	-- (6)		04/83	1989	(g)
241-TX-117		1977	-- (6)		03/83	1989	(g)
241-TY-101		1973	<1000 (8)		04/83	1980	(f)
241-TY-103		1973	3000	0.7 (l)	02/83	1986	(d)
241-TY-104		1981	1400 (8)		11/83	1986	(d)
241-TY-105		1960	35000	4 (l)	02/83	1986	(d)
241-TY-106		1959	20000	2 (l)	11/78	1986	(d)
241-U-101		1959	30000	20 (l)	09/79	1986	(d)
241-U-104		1961	55000	0.09 (l)	10/78	1986	(d)
241-U-110		1975	5000 to 8100 (8)	0.05 (q)	12/84	1986	(d)(q)
241-U-112		1980	8500 (8)		09/79	1986	(d)
67 Tanks			<750,000 - 1,050,000 (7)				

N/A = not applicable (not yet interim stabilized)

TABLE B-5. SINGLE-SHELL TANKS LEAK VOLUME ESTIMATES

Footnotes:

(1) Current estimates [see Reference (b)] are that 610 Kgallons of cooling water was added to tank A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with Dangerous Waste Regulations [Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington], any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated in accordance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 to 277 Kgallons) is based on the following (see References):

1. Reference (b) contains an estimate of 5 to 15 Kgallons for the initial leak prior to August 1968.

2. Reference (b) contains an estimate of 5 to 30 Kgallons for the leak while the tank was being sluiced from August 1968 to November 1970.

3. Reference (b) contains an estimate of 610 Kgallons of cooling water added to the tank from November 1970 to December 1978, but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.

4. Reference (c) contains an estimate the 378 to 410 Kgallons evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgallons of cooling water leakage from November 1970 to December 1978.

	Low Estimate	High Estimate
Prior to August 1968	5,000	15,000
August 1968 to November 1970	5,000	30,000
November 1970 to December 1978	0	232,000
Totals	10,000	277,000

(2) These leak volume estimates do not include (with some exceptions), such things as: (a) cooling/raw water leaks, (b) intrusions (rain infiltration) and subsequent leaks, (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.), and (d) leaks from catch tanks, diversion boxes, encasements, etc.

(3) In many cases, a leak was suspected long before it was identified or confirmed. For example, Reference (d) shows that tank U-104 was suspected of leaking in 1956. The leak was confirmed in 1961. This report lists the "assumed leaker" date of 1961. Using present standards, tank U-104 would have been declared an assumed leaker in 1956. In 1984, the criteria designations of "suspected leaker," "questionable integrity," "confirmed leaker," "declared leaker," and "borderline and dormant" were merged into one category now reported as "assumed leaker." See Reference (f) for explanation of when, how long, and how fast some of the tanks leaked. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation.

(4) The leak volume estimate date for these tanks is before the declared leaker date because the tank was in a suspected leaker or questionable integrity status; however, a leak volume had been estimated prior to the tank being reclassified.

(5) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicating continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations. (Repeat spectral drywell scans are not part of the current Tank Farm leak detection program but can be run on request a special needs arise. A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface. There are currently no functioning laterals and no plan to prepare them for use).

(6) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (9). For more details see Reference (g). The total leak volume estimate for these tanks is 150 Kgallons (rounded to the nearest Kgallon), for an average of approximately 8 Kgallons for each of 19 tanks.

(7) The total has been rounded to the nearest 50 Kgallons. Upper bound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.

(8) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.

(9) The curie content shown is as listed in the reference document and is not decayed to a consistent date: therefore, a cumulative total is inappropriate.

(10) Tank C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a minimum heel in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See References (q) and (r); refer to Reference (s) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).

(11) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.

(12) Tank T-111 was declared an "assumed re-leaker" on February 28, 1994, due to a decreasing trend in surface level measurement. This tank was pumped, and interim stabilization completed on February 22, 1995.

(13) Tank BX-111 was declared an "assumed re-leaker" in April 1993. Preparations for pumping were delayed, following an administrative hold placed on all tank farm operations in August 1993. Pumping resumed and the tank was declared interim stabilized on March 15, 1995.

(14) The leak volume and curie release estimates on tanks SX-108, SX-109, SX-111, and SX-112 have been re-evaluated using a Historical Leak Model [see Reference (t)]. In general, the model estimates are much higher than the values listed in the table, both for volume and curies released. The values listed in the table do not reflect this revised estimate because, "In particular, it is worth emphasizing that this report was never meant to be a definitive update for the leak baseline at the Hanford Site. It was rather meant to be an attempt to view the issue of leak inventories with a new and different methodology." (This quote is from the first page of the referenced report).

(15) Tri-Party Agreement milestones (M-45 series) were developed that establish a formalized approach for evaluating impacts on groundwater quality of loss of tank wastes to the vadose zone underlying these tank farms.

SST Vadose Zone Project drilling and testing activities near tank BX-102 were completed in March 2001. A borehole (299-E33-45) was drilled through the postulated uranium plume resulting from the 1951 tank

BX-102 overfill event to confirm the presence of uranium, define its present depth, and survey other contaminants of interest such as Tc-99. Samples were collected for laboratory analyses.

Borehole W33-46, adjacent to tank B-110, was drilled to a depth of approximately 190 feet in July 2001. Soil samples were collected for analysis as part of the tank farm vadose zone characterization activities.

On July 31, 2002, the Washington State Department of Ecology issued a letter-directive which suggested a path forward in dealing with the high ^{99}Tc activity in groundwater at well 299-W23-19 near tank SX-115. No formal remediation is required, however, extensive purging of the well is to be done concurrent with quarterly sampling. In addition, an array of specific conductivity probes is to be placed in the well to monitor the electrical properties of the water (^{99}Tc activity is directly proportional to electrical conductivity). A data logger with remote reading capability together with the specific conductivity probes was installed and fully operational on March 11, 2003.

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(m) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington.

(n) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington.

(o) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington.

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(q) WHC,1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington.

(r) WHC, 1993, *Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106, WHC-SD-EN-TI-185,* REV OA, Westinghouse Hanford Company, Richland, Washington.

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APPENDIX C

MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

TABLE C-1. EAST AND WEST AREA MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

ACTIVE - still running transfers through the associated diversion boxes or pipeline encasements
October 31, 2003

FACILITY	*LOCATION*	*RECEIVES WASTE FROM:*	*WASTE (Gallons)*	*MONITORED BY*	*REMARKS*
EAST AREA					
241-A-302-A	A Farm	A-151 DB	649	SACS/ENRAF/TMACS	Pumped to AW-105, 7/00
241-ER-311	B Plant	ER-151, ER-152 DB	3903	SACS/ENRAF/Manually	Pumped to AP-108, 7/01
241-AZ-151	AZ Farm	AZ-702 condensate	5122	SACS/ENRAF/TMACS	Volume changes daily - pumped to AZ-101 or AY-102 as needed
241-AZ-154	AZ Farm		25	SACS/MT	
244-BX-TK/SMP	BX Complex	DCRT - Receives from several farms	7532	SACS/MT	Receives transfers and is pumped as needed
244-A-TK/SMP	A Complex	DCRT - Receives from several farms	3931	MCS/SACS/WTF	WTF- Receives transfers and is pumped as needed
A-350	A Farm	Collects drainage	379	MCS/SACS/WTF	WTF (uncorrected). Pumped as needed
AR-204	AY Farm	Tanker trucks from various facilities	775	DIP TUBE	Pumped to AP-108, 7/00
A-417	A Farm		1176	SACS/WTF	WTF returned to service 2/7/03. Pumped to AP 102 , 3/03
CR-003-TK/SUMP	C Farm	DCRT	2960	MT/ZIP CORD	Zip cord in sump O/S; water intrusion, 1/98
WEST AREA					
241-TX-302-C	TX Farm	TX-154 DB	173	SACS/ENRAF/TMACS	
241-U-301-B	U Farm	U-151, U-152, U-153, U-252 DE	7950	SACS/ENRAF/Manually	Returned to service 12/30/93
241-UX-302-A	U Plant	UX-154 DB	1467	SACS/ENRAF/Manually	Pumped to 244-S, 1/12/03; rain intrusion 2/03 Recalibration caused decrease 6/03
241-S-304	S Farm	S-151 DB	135	SACS/ENRAF/Manually	Replaced S-302-A in 10/91; ENRAF installed 7/98. Sump not alarming.
244-S-TK/SMP	S Farm	From Single-Shell Tanks for transfer to SY-102	19828	SACS/Manually	WTF (uncorrected). Transfer from 222-S Lab via 219-S tank 102, 9/03
244-TX-TK/SMP	TX Farm	From Single-Shell Tanks and Plutonium Finishing Plant for transfer to SY-102	4848	SACS/Manually	MT. Steam jet transfer from tank D-5, 241-Z facility 1/03. Transferred to SY-102, 6/03 Line flush from SY-102 to 244-TX, 3/03
Vent Station Catch Tank		Cross Site Transfer Line	433	SACS/Manually	MT. Rain intrusion, 1/03.

Total Active Facilities - 17

Legend:		
	DB	Diversion Box
	DCRT	Double-Contained Receiver Tank
	TK, SMP	Tank, Sump
	ENRAF	Surface Level Measurement Device
	MT	Surface Level Measurement Device
	Zip Cord	Surface Level Measurement Device
	WTF	Weight Factor (can be recorded as WTF, CWF (uncorrected) and WTF (uncorrected)
	SACS	Surveillance Automated Control System
	MCS	Monitor and Control System
	Manually	Not connected to any automated system
	O/S	Out of Service

(1) Source: WHC-SD-WM-TI-356, *Waste Storge Tank Status and Leak Detection Criteria*, Rev. 0, September 30, 1988

TABLE C-2. EAST AREA INACTIVE MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES (CURRENTLY MANAGED BY TANK FARM CONTRACTOR)

INACTIVE - no longer receiving waste transfers
October 31, 2003

FACILITY	*LOCATION*	*RECEIVED WASTE FROM:*	*WASTE (Gallons)*	*MONITORED BY*	*REMARKS*
209-E-TK-111	209 E Bldg	Decon Catch Tank	Unknown	NM	Removed from service 1988
241-A-302-B	A Farm	A-152 DB	5837	SACS/MT	Isolated 1985, Project B-138 Interim Stabilized 1990, Rain intrusion
241-AX-151	N of PUREX	PUREX	Unknown	NM	Isolated 1985
241-AX-152	AX Farm	AX-152 DB	0	SACS/MT	Declared Assumed Leaker; pumped to AY-102, 3/01, no longer being used
241-B-301-B	B Farm	B-151, B-152, B-153, B-252 DB	22250	NM	Isolated 1985 (1)
241-B-302-B	B Farm	B-154 DB	4930	NM	Isolated 1985 (1)
241-BX-302-A	BX Farm	BR-152, BX-153, BXR-152, BYR-152 DB	840	NM	Isolated 1985 (1)
241-BX-302-B	BX Farm	BX-154 DB	1040	NM	Isolated 1985 (1)
241-BX-302-C	BX Farm	BX-155 DB	870	NM	Isolated 1985 (1)
241-BY-ITS2-Tk 1	BY Farm	Vapor condenser	Unknown	NM	Isolated
241-BY-ITS2-Tk 2	BY Farm	Heater Flush Tank	Unknown	NM	Stabilized 1977
241-C-301-C	C Farm	C-151, C-152, C-153, C-252 DB	10470	NM	Isolated 1985 (1)
241-ER-311A	SW B Plant	ER-151 DB	Empty	NM	Abandoned in place 1954
244-AR Vault	A Complex	Between farms & B-Plant	Unknown	NM	Stabilized 8/18/03, RPP-12051
244-BXR-TK/SMP-001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-002	BX Farm	Transfer lines	2180	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-003	BX Farm	Transfer lines	1810	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-011	BX Farm	Transfer lines	7100	NM	Interim Stabilization 1985 (1)

Total East Area Inactive Facilities - 18

Legend:		
	DB	Diversion Box
	MT	Surface Level Measurement Device
	SACS	Surveillance Automated Control System
	TK, SMP	Tank, Sump
	NM	Not Monitored

(1) Source: WHC-SD-WM-TI-356, *Waste Storage Tank Status and Leak Detection Criteria*, Rev. 0, September 30, 1988

TABLE C-3. WEST AREA INACTIVE MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

(CURRENTLY MANAGED BY TANK FARM CONTRACTOR)

INACTIVE - no longer receiving waste transfers
October 31, 2003

FACILITY	*LOCATION*	*RECEIVED WASTE FROM:*	*WASTE (Gallons)*	*MONITORED BY*	*REMARKS*
213-W-TK-1	E of 213-W Compactor Facility	Water Retention Tank	Unknown	NM	Contains only water
231-W-151-001	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
231-W-151-002	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
241-S-302	S Farm	240-S-151 DB	8218	SACS/ENRAF	Assumed Leaker EPDA 85-04
241-S-302-A	S Farm	241-S-151 DB	0		Assumed Leaker TF-EFS-90-042
	Partially filled with grout 2/91, determined still to be an assumed leaker after leak test. Manual FIC readings are unobtainable due to dry grouted surface. CASS monitoring system retired 2/99; intrusion reading discontinued. S-304 replaced S-302				
241-S-302-B	S Farm	S Encasements	Empty	NM	Isolated 1985 (1)
241-SX-302 (SX-304)	SX Farm	SX-151 DB, 151 TB	Unknown	NM	Isolated 1987
241-T-301	T Farm	DB T-151, -151, -153, -252	Unknown	NM	Isolated 1985 (241-T-301B)
241-TX-302	TX Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TX-302-X-B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (1)
241-TX-302-B	TX Farm	TX-155 DB	3256	SACS/ENRAF	New ENRAF installed 9/10/02
241-TX-302-B(R)	E. of TX Farm	TX-155 DB	Unknown	NM	Isolated
241-TY-302-A	TY Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TY-302-B	TY Farm	TY Encasements	Empty	NM	Isolated 1985 (1)
241-Z-8	E. of Z Plant	Recuplex waste	Unknown	NM	Isolated, 1974, 1975
242-T-135	T Evaporator	T Evaporator	Unknown	NM	Isolated
242-TA-R1	T Evaporator	Z Plant waste	Unknown	NM	Isolated
243-S-TK-1	N. of S Farm	Personnel Decon. Facility	Empty	NM	Isolated
244-TXR-TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-UR-001 Vault TK	U-Farm	Tank, Sump and Cell	4220	NM	Stabilized 1985
244-UR-002 Vault TK	U-Farm	Tank, Sump and Cell	1400	NM	Stabilized 1985
244-UR-003 Vault TK	U-Farm	Tank, Sump and Cell	5996	NM	Stabilized 1985
244-UR-004 Vault TK	U-Farm	Tank, Sump and Cell	Empty	NM	Stabilized 1985

Total West Area Inactive Facilities - 25

Legend:		
	DB, TD	Diverson Box, Transfer Box
	CASS	Computer Atomated Surveillance System
	FIC, ENRAF	Surface Level Measurement Devices
	MT	Manual Tape- Surface Level Measurement Device
	TK, SMP	Tank, Sump
	SACS	Surveillance Automated Control System
	R	Replacement
	NM	Not Monitored

(1) Source: WHC-SD-WM-TI-356, *Waste Storage Tank Status and Leak Detection Criteria* Rev. 0, September 30, 1988

APPENDIX D

GLOSSARY OF TERMS

TABLE D-1. GLOSSARY OF TERMS

1. DEFINITIONS

WASTE TANKS - General

Waste Tank Safety Issue

A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition. There are currently no waste tank safety issues.

Characterization

Characterization is understanding the Hanford tank waste chemical, physical, and radiological properties to the extent necessary to ensure safe storage and interim operation, and ultimate disposition of the waste.

WASTE TYPES

Aging Waste (AW)

High level, first cycle solvent extraction waste from the PUREX plant (NCAW).

Concentrated Complexant (CC)

Concentrated product from the evaporation of dilute complexed waste.

Concentrated Phosphate Waste (CP)

Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste.

Dilute Complexed Waste (DC)

Characterized by a high content of organic carbon including organic complexants: ethylenediaminetetraacetic acid (EDTA), citric acid, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), were the major complexants used. Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs).

Dilute Non-Complexed Waste (DN)

Low activity liquid waste originating from S and T Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernatant).

Drainable Interstitial Liquid (DIL)

Interstitial liquid that is not held in place by capillary forces and will, therefore, migrate or move by gravity.

Double-Shell Slurry (DSS)

Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.

Double-Shell Slurry Feed (DSSF)

Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.

Evaporator Feed Tank (EVFD)

Dilute waste staged for evaporation; waste type will vary (usually DN or DC).

PT(PFP TRU Solids)

PFP operations generated a low-level, non-complexed supernate and TRU solids. The solids currently in SY-102 came primarily from past PFP operations and were designated PT. The supernatant currently in this tank is dilute non-complexed, designated as DN.

Slurry Receiver Tank (SRCVR)

Concentrated waste produced by evaporation; waste type will vary (usually DSSF or CC).

Supernatant Liquid

The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks.

INTERIM STABILIZATION (Single-Shell Tanks only)

Interim Stabilized (IS)

A tank which contains less than 50 Kgallons of drainable interstitial liquid and less than 5 Kgallons of supernatant. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow or saltwell screen inflow must also have been at or below 0.05 gpm before interim stabilization criteria are met.

Jet Pump

The jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well casing to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down-hole jet assembly, 3) flexible or rigid transfer jumpers, 4) a flush line, and 5) a flowmeter. The jumpers contain piping, valves, and pressure and limit switches.

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber. The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle, lifting power fluid, and interstitial liquid to the pump pit. Pumping rates vary from 0.05 to about 4 gpm.

Saltwell Screen

The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system will extend through the tank waste to near the bottom of the tank. The saltwell screen portion of the casing is an approximately 10-foot length of 300 Series, 10-inch diameter, stainless steel pipe with screen openings (slots) of 0.05 inches.

Emergency Pumping Trailer

A 45-foot tractor-type trailer is equipped to provide storage space and service facilities for emergency pumping equipment: this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid-mounted Weight Factor Instrument Enclosure with an air compressor and electronic recording instruments. The skid also contains a power control station for the pumps, pump pit leak detection, and instrumentation. A rack for over 100 feet of overground double-contained piping is also in the trailer.

INTRUSION PREVENTION (ISOLATION) (Single-Shell Tanks only)

Partially Interim Isolated (PI)

The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)

The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. In June 1993 the term "Interim Isolation" was replaced by "Intrusion Prevention."

Intrusion Prevention (IP)

Intrusion Prevention is the administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump).

Controlled, Clean, and Stable (CCS)

Controlled, Clean, and Stable reflects the completion of several objectives: "Controlled" - provide remote monitoring for required instrumentation and implement controls required in the TWRS Authorization Basis; "Clean" - remove surface soil contamination and downpost the Tank Farms to RBA/URMA/RA radiological control status, remove abandoned equipment, and place reusable equipment in compliant storage; and "Stable" - remove pumpable liquids from the SSTs and IMUSTs and isolate the tanks.

Retrieval (R)

The process of removing, to the maximum extent practical, all the waste from a given underground storage tank. The retrieval process is selected specific to each tank and accounts for the waste type stored and the access and support systems available. Generally, retrieval is focused on removal of solids from the tank.

Final Closure

Final closure of the operable units (tank farms) shall be defined as regulatory approval of completion of closure actions and commencement of post-closure actions. For the purposes of this agreement (Hanford Federal Facility Agreement and Consent Order Change Control Form, Change Number M-45-02-03), all units located within the boundary of each tank farm will be closed in accordance with Washington Administrative Code 173-303-610. In evaluating closure operations for single-shell tanks, contaminated soil, and ancillary equipment, the Washington State Department of Ecology and the Washington State Environmental Protection Agency will consider cost, technical practicability, and potential exposure to radiation. Closure of all units within the boundary of a given tank farm will be addressed in a closure plan for single-shell tanks.

TANK INTEGRITY

Sound

The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.

Assumed Leaker

The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

Assumed Re-Leaker

A condition that exists after a tank has been declared as an "assumed leaker" and then the surveillance data indicate a new loss of liquid attributed to a breach of integrity.

TANK INVESTIGATION

Intrusion

A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

Drywells

Historically, the drywells were monitored with gross logging tools as part of a secondary leak monitoring system. In some cases, neutron-moisture sensors were used to monitor moisture in the soil as a function of well depth, which could be indicative of tank leakage. The routine gross gamma logging data were stored electronically from 1974 through 1994. The routine gross gamma logging program ended in 1994. A program was initiated in 1995 to log each of the available drywells in each tank farm with a spectral gamma logging system. The spectral gamma logging system provides quantitative values for gamma-emitting radionuclides. The baseline spectral gamma logging database is available electronically.

Repeat spectral drywell scans are not part of the established Tank Farm leak detection program, but they can be run on request if special needs arise. A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface.

Laterals

Laterals are horizontal drywells positioned under single-shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage. These drywells can be monitored by radiation detection probes. Laterals are 4-inch inside diameter steel pipes located 8 to 10 feet below the tank's concrete base. There are three laterals per tank. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use.

Surface Levels

The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes, and recorded and transmitted or entered into the Surveillance Analysis Computer System.

Automatic FIC

An automatic waste surface level measurement device is manufactured by the Food Instrument Corporation (FIC). The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape, a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and until February 1999, the majority of the FICs transmitted readings to the Computer Automated Computer Surveillance System (CASS). Since CASS retirement, all FIC gauges are read manually. FICs are being replaced by ENRAF detectors (see below).

ENRAF 854 ATG Level Detector

FICs and some manual tapes are in the process of being replaced by the ENRAF ATG 854 level detector. The ENRAF gauge, fabricated by ENRAF Incorporated, determines waste level by detecting variations in the weight of a displacer suspended in the tank waste. The displacer is connected to a wire wound onto a precision measuring drum. A change in the waste level causes a change in the weight of the displacer which will be detected by the force transducer. Electronics within the gauge causes the servo motor to adjust the position of the displacer and compute the tank level based on the new position of the displacer drum. The gauge displays the level in decimal inches. The first few ENRAFs that received remote reading capability transmit liquid level data via analog output to the TMACS. The remaining ENRAFs and future installations will transmit digital level data to TMACS via an ENRAF Computer Interface Unit (CIU). The CIU allows fully remote communication with the gauge, minimizing tank farm entry.

Annulus

The annulus is the space between the inner and outer shells on DSTs only. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. The annulus conductivity probes and radiation detectors are the primary means of leak detection for all DSTs.

Liquid Observation Well (LOW)

In-tank liquid observation wells are used for monitoring the ILL in single-shell tanks. The wells are usually constructed of fiberglass or TEFZEL-reinforced epoxy-polyester resin (TEFZEL is a trademark of E. I. du Pont de Nemours & Company). There are a few LOWs constructed of steel. LOWs are sized to extend to within 1 inch of the bottom of the waste tank, are sealed at their bottom ends, and have a nominal outside diameter of 3.5 inches. Gamma and neutron probes are used to monitor changes in the ILL, and can indicate intrusions or leakage by increases or decreases in the ILL. There are 70 LOWs installed in SSTs that contain or are capable of containing greater than 50 Kgallons of drainable interstitial liquid. All of the LOWs are monitored weekly with the exception of TX-108 which is monitored by request only. Two LOWs installed in DSTs SY-102 and AW-103 are used for special, rather than routine, surveillance purposes only.

Thermocouple (TC)

A thermocouple is a thermoelectric device used to measure temperature. More than one thermocouple element on a device (probe) is called a thermocouple tree. In DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only, there are TC elements installed in the insulating concrete, the lower primary tank knuckle, the secondary tank concrete foundation, and in the outer structural concrete.

These monitor temperature gradients within the concrete walls, bottom of the tank, and the domes. In SSTs, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single TC element may be installed in a riser or lowered down an existing riser or LOW. There are also four thermocouple laterals beneath tank 105-A in which temperature readings are taken in 34 TC elements.

In-tank Photographs and Videos

In-tank photographs and videos may be taken to aid in resolving in-tank measurement anomalies and determine tank integrity. Photographs and videos help determine sludge and liquid levels by visual examination.

ACRONYMS - Waste Type acronyms begin on Page D-2

BBI	Best Basis Inventory
CCS	Controlled, Clean, and Stable (tank farms)
CH2M HILL	CH2M HILL Hanford Group, Inc.
DCRT	Double-Contained Receiver Tank
DST	Double-Shell Tank
FSAR	Final Safety Analysis Report effective October 18, 1999
Gal	Gallon
GPM	Gallons Per Minute
II	Interim Isolated
Kgal	Kilogallons
IP	Intrusion Prevention Completed
IS	Interim Stabilized

MT/FIC/ENRAF — Manual Tape, Food Instrument Corporation, ENRAF Corporation (surface level measurement devices)

OSD — Operating Specifications Document

PI — Partial Interim Isolated

PER — Problem Evaluation Request

PFP — Plutonium Finishing Plant

RBA/URMA/RA — Radiological Buffer Area/Underground Radiation Material Area/Radiation Area

SAR — Safety Analysis Report

SHMS — Standard Hydrogen Monitoring System

SST — Single-Shell Tank

SWL — Salt Well Liquid

TFXR — Tank Transfer Database

TMACS — Tank Monitor and Control System

TPA — Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy," as amended (Tri-Party Agreement)

TSR — Technical Safety Requirement

USQ — Unreviewed Safety Question

Additional definitions (used in the SST Inventory columns) follow: (IL, DIL, DLR, PLR, etc.)

2. INVENTORY AND STATUS BY TANK – COLUMN VOLUME CALCULATIONS AND DEFINITIONS FOR TABLE B-1 (Single-Shell Tanks only)

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (**Underlined**)/DEFINITIONS
Total Waste	Solids volume plus Supernatant Liquid. Solids include sludge and saltcake (see definitions below).
Supernatant Liquid (1)	May be either measured or estimated. Supernatant is either the estimated or measured liquid floating on the surface of the waste or under a floating solids crust. In-tank photographs or videos are useful in estimating the liquid volumes; liquid floating on solids and core sample data are useful in estimating large liquid pools under a floating crust.

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (**Underlined**)/DEFINITIONS
Drainable Interstitial Liquid (DIL) (1)	This is initially calculated. Drainable interstitial liquid is calculated based on the saltcake and sludge volumes, using calculated porosity values from past pumping or actual data for each tank. Interstitial liquid is liquid that fills the interstitial spaces of the solids waste. The sum of the interstitial liquid contained in saltcake and sludge minus an adjustment for capillary height is the initial volume of drainable interstitial liquid.
Pumped This Month	Net total gallons of liquid pumped from the tank during the month. If supernatant is present, pump production is first subtracted from the supernatant volume. The remainder is then subtracted from the drainable interstitial liquid volume.
Total Pumped (1)	Cumulative net total gallons of liquid pumped from 1979 to date.
Drainable Liquid Remaining (DLR) (1)	Supernatant plus Drainable Interstitial Liquid. The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernatant.
Sludge	Solids formed during sodium hydroxide additions to waste. Sludge was usually in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs or videos may be used to estimate the volume.
Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs or videos may be used to estimate the saltcake volume.
Solids Volume Update	Indicates the latest update of any change in the solids volume.

(1) Volumes for supernatant, DIL, and DLR are not shown in these columns until interim stabilization is completed. Total gallons pumped, total waste, sludge, and saltcake volumes are shown and adjusted based on actual pumping volumes.

APPENDIX E

TANK CONFIGURATION AND FACILITIES CHARTS

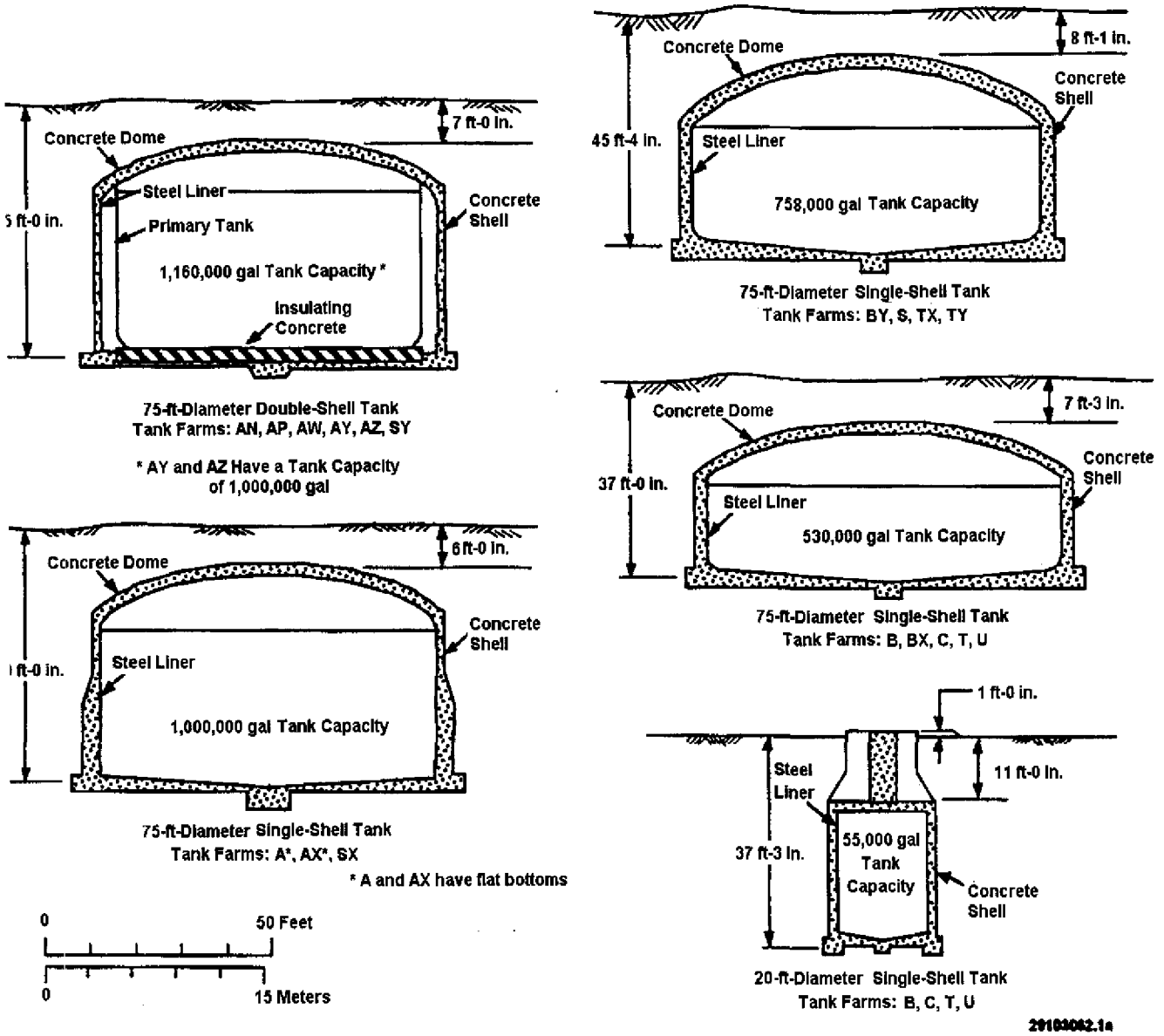

Figure E-1. High-Level Waste Tank Configurations

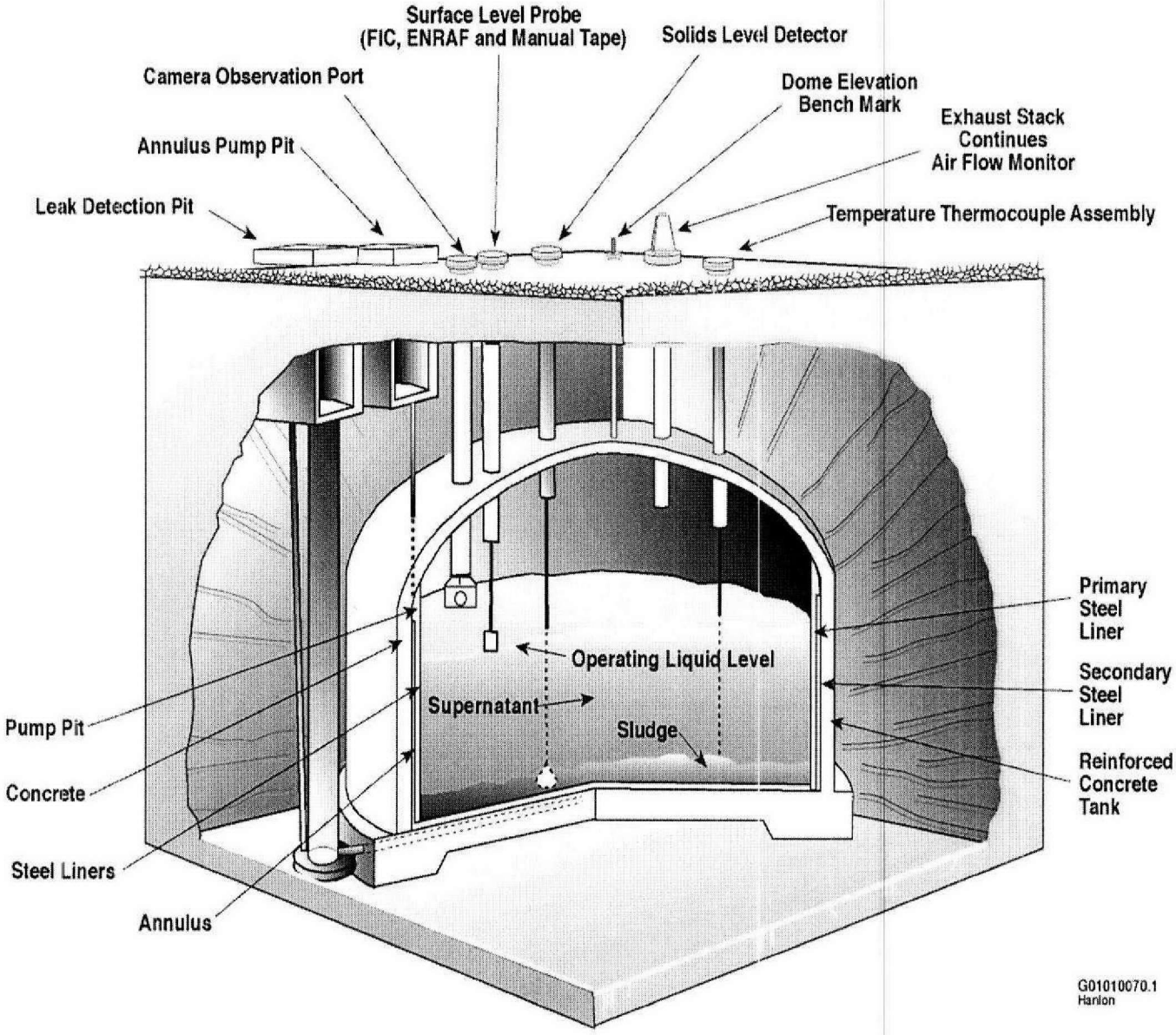

Figure E-2. Double-Shell Tank Instrumentation Configuration

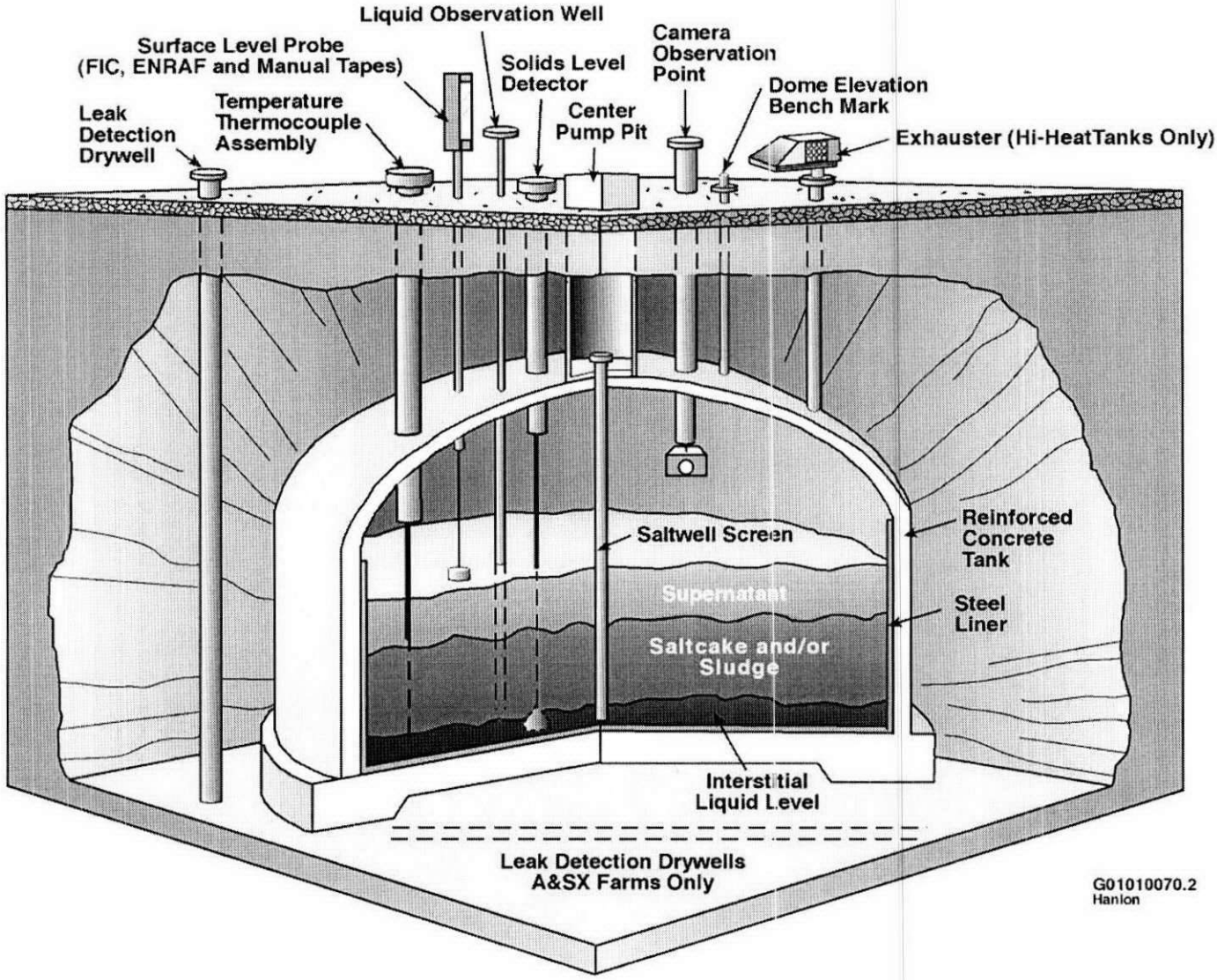

Figure E-3. Single-Shell Tank Instrumentation Configuration

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